HOARD'S DAIRYMAN

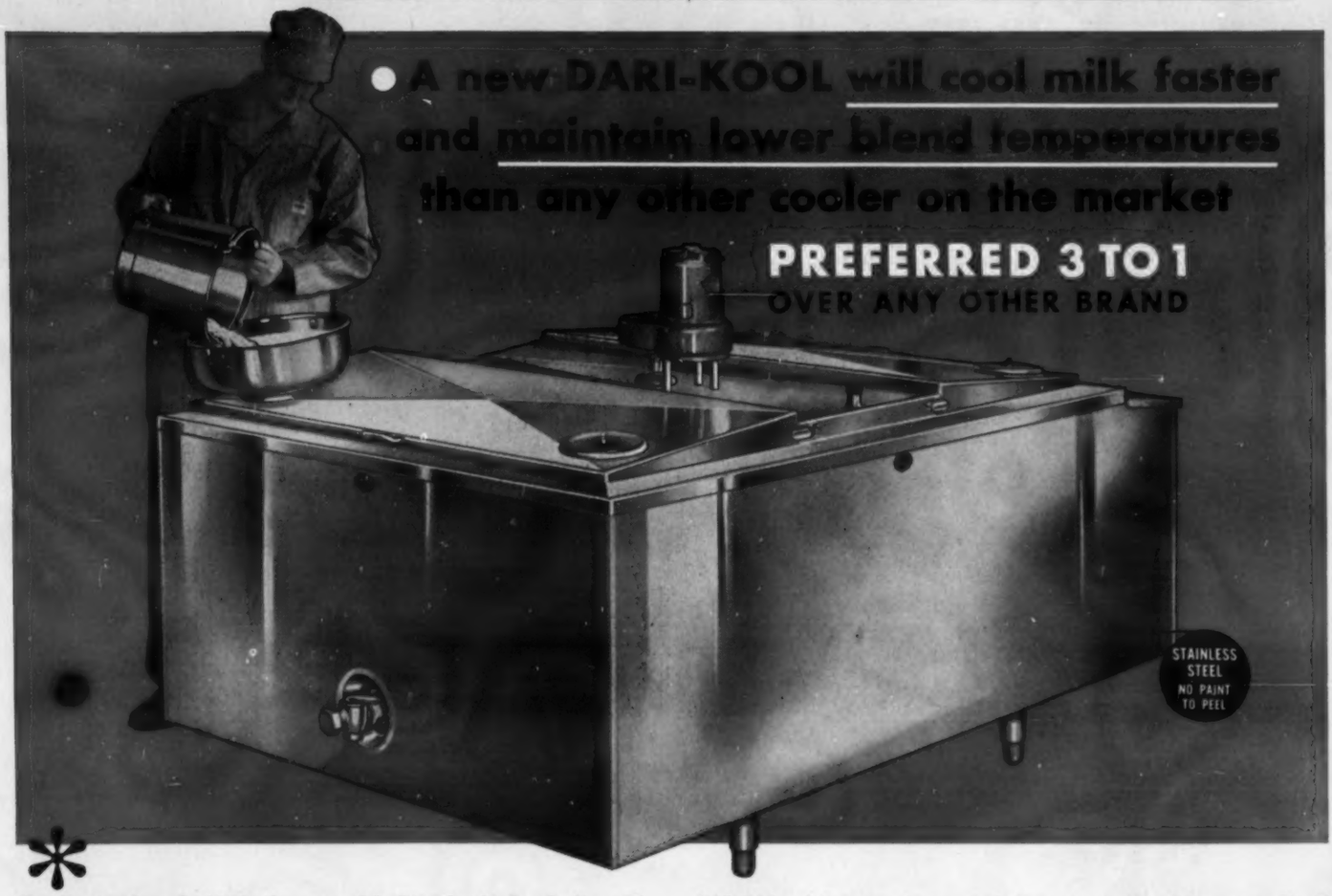
75 YEARS OF LEADERSHIP
1885-1960

MAY 10, 1960

THE NATIONAL DAIRY FARM MAGAZINE

There's a BIG DIFFERENCE in Bulk Tanks!

Make SURE the Tank You Buy Has the COOLING POWER to Meet the New 3A Blend Temperature Requirements*


• A new DARI-KOOL will cool milk faster and maintain lower blend temperatures than any other cooler on the market
PREFERRED 3 TO 1
OVER ANY OTHER BRAND
STAINLESS STEEL
NO PAINT TO PEEL

*

On September 1, 1960, the new 3A Standards for bulk milk coolers become effective. The new regulations require — "That the cooling systems for bulk milk tanks shall be capable of preventing the blend temperature of the milk in the tank from rising above 50° F at any time during the addition of the second or subsequent milkings." Enforcement of the new 50° F blend temperature regulations can mean "down-grading" or possible "rejection" for improperly cooled milk. "Cut-price" tanks sold with undersized compressors can prove to be "expensive bargains". With a new Dari-Kool you can be SURE that your cooler will more than meet the new regulations. And your butterfat test will not be lowered by frozen milk.

33° ice-water is pressure-sprayed over all 4 sides and the entire bottom of the milk tank. Milk heat is removed faster than is possible with any other cooler or method.

DARI-KOOL OPERATES ECONOMICALLY!

A Dari-Kool, operating under full load and normal milkhouse conditions, will cool 100 lbs. of milk for less than 1 KW of electricity — on a yearly average. In metered tests run at Young's Dairy, Twin Falls, Idaho, a 300 gallon Dari-Kool used only .83 KW per 100 lbs. of milk. A copy of this test will be mailed upon request.

LOW-COST, OFF-PEAK RATES

In many areas "demand charges" are assessed against direct-expansion coolers which must operate during "peak-load" periods. Dari-Kool owners are permitted to operate their coolers on "low-cost off-peak rates" — as is done with water heaters. This saves real money for Dari-Kool owners. See your Dari-Kool dealer.

Buy Your DARI-KOOL On Our New Purchase Plan

• NO MONEY DOWN • 4% INTEREST • 4 YEARS TO PAY

DARI-KOOL
BULK MILK COOLERS

WRITE DEPT. 76 TODAY FOR YOUR NEW

FREE Milkhouse Plan Kit

DAIRY EQUIPMENT CO., Madison, Wis.

Manufacturers of KARI-KOOL Bulk Pick-up Truck Tanks

Distributed in Canada by BEATTY BROS., Fergus, Ontario

GOODYEAR TIRES

"They treat you fine at the Goodyear Sign!"

Why take less than the "TOTAL TRACTION" you get with TRACTION SURE-GRIP!

Here's the proof!

THE START: TRACTION SURE-GRIP thrusts solidly against walls of earth behind its lugs—a greater area to utilize the torque because the lugs are longer, deeper and ruler-straight.

THE FIRST FORWARD MOVE: Now the lugs, wider apart at the tire center than at the shoulders, actually wedge the soil between them for a vise-like grip that greatly reduces slippage.

THE SHOULDERS ADD THRUST: The TRACTION SURE-GRIP lugs, running right down the sidewalls, add many extra square inches of traction area. This thrust at the sides of the tire, as well as under it, results in "total traction."

There's no mystery about TRACTION SURE-GRIP traction that harnesses practically *all* of a modern tractor's high horsepower.

There simply is *more* gripping area, a *stronger* grip, and better *cleaning* action. The result: better and faster work, lower fuel cost per acre of work done.

And *endurance!* TRACTION SURE-GRIP 3-T Cord is triple-tempered by the *exclusive* Goodyear process involving Tension, Temperature and Time. It gives you unique freedom from bruises, buckle breaks, cracks. And the toughest rubber compounds in the tread defy chipping, tears, *wear.*

ON-THE-FARM SERVICE. Your Goodyear dealer is equipped to deliver, mount and fill new tires right on the farm. He'll make some repairs right on the spot, or take tires back for major repairs or retreading while he keeps you going with free loaners. Call him in to quote you on his liberal trade-in tire allowance! Goodyear, Farm Tire Dept., Akron 16, Ohio.

Tops in front tire performance

NEW SUPER-RIB

3 ribs for better steering, better flotation, better wear!

BUY OR SPECIFY FARM TIRES BY

GOODYEAR

Sure-Grip—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

MORE FARMERS PREFER GOODYEAR TRACTOR TIRES THAN ANY OTHER KIND

Mr. William C. McLellan, President, Mello-Rich Guernsey Farms, Inc., Geneva, New York

"Quality led us to recommend
CHERRY-BURRELL BULK MILK TANKS
to our producers"

"When we converted to bulk handling in our dairy plant, our producers came to us with questions about bulk milk tanks. Our experience with Cherry-Burrell processing equipment led us to look into their bulk tank line. We found the same fine quality in the tanks as we found in the Cherry-Burrell equipment we use in our plant. So we recommended Cherry-Burrell. Now all our producers are using Cherry-Burrell Bulk Milk Tanks and getting highly satisfactory service from them."

Examine a Cherry-Burrell Bulk Milk Tank. Talk with your milk plant operator. You'll see for yourself why Cherry-Burrell can offer you the best in bulk milk tanks — why Cherry-Burrell has attained leadership in service to the dairy industry.

Processor-recommended
CHERRY-BURRELL DIRECT EXPANSION BULK MILK TANK

Features all stainless steel construction, inside and out. V-bottom rectangular shape gives you lower rail height — makes cleaning fast and easy. Gentle 29 r.p.m. agitation gives positive fat dispersion. Single-pass refrigerant flow eliminates dead heat transfer areas.

Cherry-Burrell Direct Expansion tanks are available in capacities from 210 to 1000 gallons and as completely packaged or remote condensing units.

CHERRY-BURRELL CORPORATION
CEDAR RAPIDS, IOWA

HOARD'S DAIRYMAN

The National Dairy Farm Magazine

Publishers
W. D. Hoard & Sons Co.
Fort Atkinson, Wis.

W. D. Hoard

Founded by
W. D. Hoard, 1885
Fort Atkinson, Wis.

W. D. HOARD, JR.
General Manager

W. D. KNOX
Editor

Associate Editor, E. C. MEYER
Associate Editor, R. E. DAVENPORT
Advertising Manager, T. E. BJORK
Veterinary Editor, DR. E. A. WOELFFER

Volume 103, No. 9
May 10, 1960

In this issue . . .

Title page

81,114 entries 509

Features

When should a cow be bred? . . . . . *R. E. Erb* 511
When your mower clogs . . . . . *B. S. Horne* 512
Use the "one-two" punch on weeds . . . *E. P. Sylwester* 513
Fertilize for the most dollars . . . . . *R. L. Cook* 514
Trace elements can make the difference . . *K. C. Berger* 515
Tips for easier cleaning . . . . . *M. Speers* 534

Short articles

ADA completes 20th year 519
Green manure vs. commercial fertilizers . . *F. C. Stickler* 525
Ladino clover has moved in *Chamblee and Woodhouse, Jr.* 526
"This is a good life!" . . . . . *W. Larson* 532
Easy manure disposal . . . . . *L. Elam* 539
The tie that binds the udder . . . . . *L. Stratton, Jr.* 542
New herbicides 544
Salt . . . is it vital and poisonous, too? *E. A. Woelffer, D.V.M.* 550

Regular departments

Washington Dairygrams . 501
Opinions and Brickbats . 502
Farm Flashes 510
Editorials 520
Questions from Our Readers 521
Handy Hints 531
Artificial Breeding . . . 532
Dairy Farm Home . . . 534
Patterns 535
Poultry 536
Swine 537
Feeding 538
Young Dairymen . . . 540
Veterinary 551

COVER PICTURE

Think things are tough during corn planting season? Just relax on your tractor seat and content yourself with thoughts of how Grandad or Great Grandfather planted corn. In the foreground on our cover picture this issue is a scene posed at the Stonefield Farm and Craft Museum, Cassville, Wisconsin. In the background is an action photo of corn planting on the Hoard's Dairyman farm, just two miles north of our office. There's a lot of nostalgia in reminiscing about the good old days but who wants to go back? One advantage might be that there would be no corn surplus if we had to plant it by hand.

Hoard's Dairyman, copyright 1960 by W. D. Hoard & Sons Company. All rights reserved. Title registered U. S. Patent office.

Published the 10th and 25th of each month by W. D. Hoard & Sons Company, 28 Milwaukee Avenue, West, Fort Atkinson, Wisconsin. Entered as second-class matter July 25, 1908, at the post office at Fort Atkinson, Wisconsin, under the act of March 3, 1879.

Subscription Prices. United States and possessions, 5 years, $2.00. One year, $1.00. In Canada, 1 year, $2.00; three years, $5.00. In all other countries including Latin America, 1 year, $3.00.

The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 10th of the preceding month. For the 25th of the month issue, copy must be received before the 25th of the preceding month.

Washington Dairygrams

FARM DEBATE BREAKS WIDE OPEN AGAIN AS REPRESENTATIVE POAGE (TEX.) INTRODUCES REVAMPED GENERAL FARM BILL. HAS SUPPORT OF HOUSE LEADERSHIP. HOPE FOR PASSAGE EARLY MAY AND THEN TO SENATE FOR ACTION.

DAIRY LEADERS RELIEVED AS NEW BILL WILL NOT TERMINATE FEDERAL MILK ORDERS AS EARLIER BILL PROVIDED.

WHEAT GETS SENATE ATTENTION AS AGRICULTURE COMMITTEE STARTS LONG DEFERRED HEARINGS. SITUATION CLOUDY. MANY PROPOSALS IN HOPPER. SOMETHING MUST BE DONE OR ENTIRE SUPPORT PROGRAM COULD COLLAPSE.

MILK FLOW PICKS UP AGAIN AS PRODUCTION IN FIRST THREE MONTHS OF YEAR UP OVER 1 PER CENT COMPARED TO LAST YEAR. HEAVY GRAIN FEEDING HELPS BOOST PRODUCTION PER COW 2 PER CENT ABOVE 1959.

UNFAIR DAIRY SELLING PRACTICES COME UNDER SCRUTINY OF HOUSE SPECIAL SMALL BUSINESS SUBCOMMITTEE. LEGISLATION DEMANDED TO OUTLAW DISCRIMINATORY SALES PRACTICES WHICH HURT SMALL DAIRIES.

NEW REGULATION ON ANTIBIOTICS ISSUED BY FOOD AND DRUG ADMINISTRATION. WHEN ANTIBIOTICS USED FOR INTRAMUSCULAR OR INTRAVENOUS INJECTION LABELS MUST SPECIFY TIME MILK IS TO BE WITHHELD.

CONSERVATION RESERVE BOOSTS ACREAGE TO NEW HIGH WITH 305,000 CONTRACTS INVOLVING 28,432,000 ACRES, AN INCREASE OF 6.3 MILLION ACRES OVER LAST YEAR. ABOUT 80 PER CENT OF FARMERS PLACING NEW LAND ELECTED TO COME IN ON "WHOLE FARM" BASIS.

DAIRY PRICE SUPPORT PURCHASES IN MARKETING YEAR ENDING MARCH 31 WERE DOWN 10 PER CENT FROM LAST YEAR.

★ ★ ★

In YOUR next issue!

FORAGE TESTING IS PAYING OFF . . . This farm-by-farm report shows how Pennsylvania dairymen are saving on their feed bills but are getting more milk from their herds. Don't miss it!

IMPROVE SOIL CONDITIONS FIRST . . . Money spent for fertilizer may be wasted unless you know what your soil needs. Some soils need lime, tiling, or supplementary irrigation before fertilizer can do a good job.

KNOW HOW TO CALIBRATE YOUR SPRAYER . . . The crackdown on chemicals in food makes this article a "must" for every farmer. It shows how to get correct mixture for all types of sprayers.

POOR HAY DRIES 'EM UP! . . . Kentucky tests show that even when feeding normal amounts of grain, poor hay can drive you out of dairying.

AND MANY MORE . . .

Easy TO ORDER OR RENEW!

HOARD'S DAIRYMAN
Fort Atkinson, Wisconsin

☐ New
☐ Renewal

I enclose $_____ Please send me Hoard's Dairyman for _____ years.

Name_____ R. F. D._____

P. O._____ State_____

SPECIALS

3 years $2.00 - 5 years $3.00 (Reg. price 1 year $1.00)

(CANADIAN: 1 Year—$2.00 — FOREIGN: 1 Year—$3.00)

GEHL'S SELF-UNLOADER

Wilted grass silage unloads in quick time—*a ton a minute*

Ear corn too—all grains in fact, because the Gehl is grain tight

best bunkmate for green feeding

. . . you might say a perfect match — the Gehl and green chop. Actually you and the Gehl Self-Unloader feed a herd and never lift a hand. And that's from the minute you pull into the field with a chopper (Gehl, of course) until you ride down the bunk line automatically doling out fresh-cut forage from the large-capacity box (16 feet long including cross conveyor).

3-speed conveyor

This tractor-seat bossing of chore-time is a Gehl of a good idea. With a 3-speed, 4-chain bed conveyor, the Gehl keeps the wettest, stickiest loads on the go. The power-driven beaters mix the forage so it lies in the bunks in all of its short-cut goodness.

The Gehl Self-Unloader has a rubber cross conveyor, too. Lasts practically a lifetime — even handling rough grains and corn.

While the big capacity Gehl makes fast work of green feeding, there are no restrictions on its use. This one stays busy in all seasons. Try it for dry hay, wilted grass silage . . . take into wet and heavy corn silage, pull it behind your picker later on. Unload your combine into the grain-tight Gehl, and unload a lot of work at the grain bins.

Assembled . . . or metal parts

Nice thing about the Gehl is that you buy it complete or the metal parts kit for do-it-yourself construction. Either way you put green feeding on fast time while you relax at the wheel of your tractor.

The coupon brings details about models and sizes . . . your Gehl dealer has them, also. See him or write for free literature. This is good to know, too — Gehl puts all price factors in your favor.

GEHL PTO FORAGE PARTNERS . . . *lift the burden from your back, make your tractor payback more*

8-6021

GEHL 101 YEARS OF SERVICE

GEHL BROS. MANUFACTURING CO.
Dept. UE-26-8, West Bend, Wisconsin
Please send details on the Gehl Self-Unloader.

Name_____

Route_____ Town_____

State_____ ☐ I am a student

Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Inspection: On antibiotics

I am writing as an inspector, but with consideration of the dairyman.

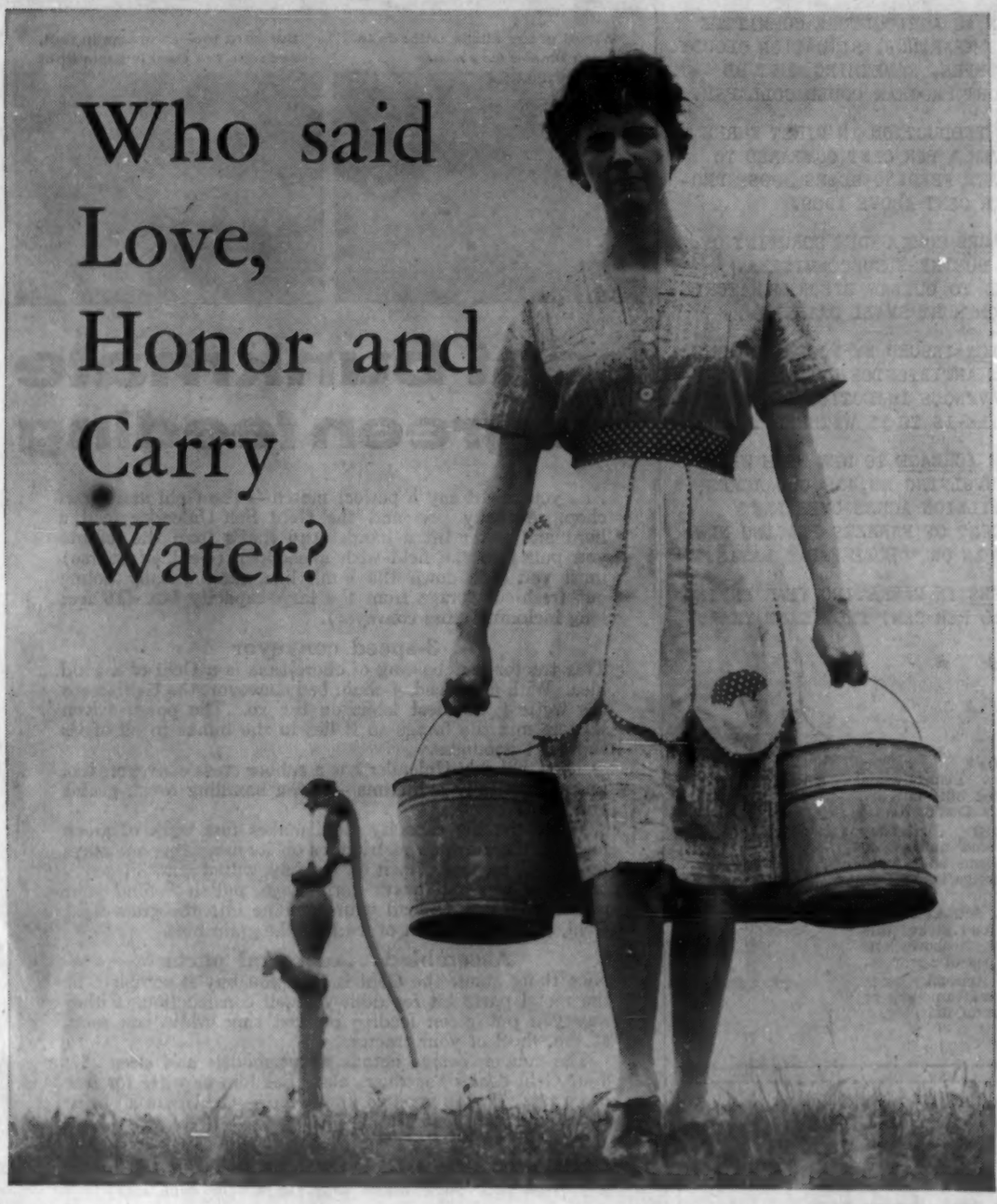
The dairy farmer is expected to produce milk free of bacterial-inhibiting substances, which may include many things other than penicillin. Penicillin is the villain mainly because it is easy to test for. To comply, even the most conscientious dairyman must be thoroughly informed on every set of circumstances which could cause an unfavorable test.

Our five years of experience on this control program has taught us several lessons, some almost embarrassing. The following are situations which could lead to difficulty:

1. Low producing cows that may not clear up completely in 72 hours.
2. Udder balms and teat dilators containing drugs or antibiotics.
3. Use of high strength bactericidal agents and failing to dampdry udder.
4. The treatment and subsequent drying up of a bad quarter while continuing to milk other three. In this case antibiotics may be shed for several weeks.
5. A series of intramuscular injections. One shot may not show but several will.
6. The sample must be, without doubt, completely representative; that is to say, a dipper treated with a bactericide is not satisfactory. An untreated sterile disposable tube is preferred.

Consideration of the above factors (and there may be more) should remove some potential misunderstandings.

Oregon — ELLIS RACKLEFF, Dairy Inspector



Who wants to carry water? *You don't have to pump and carry water, or rely on an out-dated electric pump that gives only half the water you need. A modern Myers OLYMPIAN Pump carries the water for you. Puts it where you want it, quickly, quietly, economically. See your Authorized Myers Pump Dealer, today. He'll engineer a water supply system tailored exactly to your needs.*

Myers — The F. E. Myers & Bro. Co. ASHLAND, OHIO KITCHENER, ONTARIO

Contest relieves pressure

I think it is only fitting to tell you how much I enjoy your Hoard's Dairyman and I look forward each year to the cow judging contest. I like to study each class and look for the strong points and the weak ones; in other words, pick them apart as I see them, place them, and then wait until the official placings come out.

As I have only a small farm with 12 milk cows and, as you know, the small farmer is being pushed hard to exist, this contest takes my mind off of the pressure of pipeline milkers, bulk tanks, new machinery, the education of my children, and the increasing cost of operation with declining milk prices.

Tennessee — ROY SCHEITLIN

Always enjoy contest

We have been readers of your magazine for a long time. We enjoy every page of it, especially the clean type of advertisements and each year we all look for the judging contest. My son, Rodney, and I sent our placings.

Arkansas — WALLACE R. PENNER

"Lousy federal orders"

In the Washington Dairygrams column (March 25) it is reported that Congress is considering bills which would wipe out block voting in federal milk orders. Your Washington correspondent indicated this would jeopardize the federal orders.

Who do you think is jeopardized now — those dairy farmers under these lousy federal milk orders.

We sincerely think this item should have read, "Attention, dairy farmers (under the federal milk order), whose freedom to vote has been denied you, where the manager does your voting for you. All those in favor of getting your voting freedom back and getting the federal government off your neck, be sure to write your congressman and Benson to do all in their power to see that the bill passes."

Michigan — CARL VAN ZEE

A good "spanking"

Bouquets to the article, "The 'meanest, most stubborn cow,'" by P. Tenney Mudgett. I really enjoyed reading this article about the stubborn cow.

Yes, all the articles always say, "never, never, no never strike a cow," but sometimes it's only after a good "spanking" that they realize there are rules and regulations to being milked. Just like children, they have to be taught right from wrong.

I know just how Mrs. Mudgett felt about this business of "kicked off dirty milkers" as I went through the same ordeal when my hubby attended a convention at Fond du Lac recently.

I don't believe in giving a cow a "licking" for every little move but when she kicked the milker off three times in a row the same milking, I lost my temper, too. After a couple good "swats" with the hose we had an "understanding," too.

Surely am glad to know that

(Continued on page 504)

NEW! OLIVER COMPACT COMBINE

Corn-belt capacity speeds all your harvests

Capacity for corn, beans, grain, sorghum, grass seed

Power—64.7 h.p. engine

Capacity—3570-sq.-in. separator
2534-sq.-in. cleaner

Time—Finger-tip, on-the-go ground speed control

Accuracy—Easy, crank-adjusted cylinder speed*

Now, a time- and money-saving combine with power threshing ability and versatility to harvest *all* your crops. This brand-new, compact Oliver self-propelled wades right through bumper yields—of a wide variety of crops. Here is *genuine corn-belt capacity* that saves time, saves grain in every field. Best of all, it's *priced right for the average-size farm.*

It's loaded with corn-belt features: 10-foot or 12-foot* grain header with choice of four reel speeds; 4-bat standard or 6-bat semi-revolving* reel; easy-change corn header shells as it harvests, handles 100-plus yields. You can change ground speeds on the go hydraulically with a touch of a lever. You can change cylinder speeds in seconds with a turn of a crank*. And you ride up out of the dust on a comfortable rubber-spring seat.

There's much more you'll want to know about this versatile, efficient combine. Talk to your Oliver dealer now. Ask him about his 6% cash bonus trade-in plan.

**Optional, at extra cost.*

THE OLIVER CORPORATION, 400 W. Madison St., Chicago 6, Ill.

GO BIGGER...GO BETTER—GET OLIVER TEAMED-POWER

(Continued from page 502)

I'm not the only one milking cows that felt "she had it coming" (although hubby disagrees).

Three cheers, Mrs. Mudgett, may we always understand our cows.

Wisconsin E. NORLAND

Picked a winner

I want to commend you for publishing the article "Cats are nice, because . . ." by Ben Brown. It was extremely well written, humorous, and the author showed a comprehension of his subject far beyond that which many authors manifest over subjects much easier understood than cats. It is so good I wish it could be read by other farmers of whatever type of farming engaged in. Other farm magazines please should copy. Hoard's Dairyman surely picked a winner.

Iowa MRS. R. W. CROSS

Wrong harness

This year, being your 75th anniversary of Hoard's Dairyman, has an exceptional appeal to me because I, too, was born in 1885.

Your cover for the March 25 issue is a fine idea but not consistent. The harness shown on the horse is not of the type used in 1885, but light carriage harness that was popular about 1900. Used in connection with a tractor depicting 1960, it would have been better, if possible, to have used heavy work harness.

Keep up your good work. I read several farm papers each month and find Hoard's Dairyman superior to some of the others, and equal to the best.

The article, "Standards for dairy farms," should be a real help to farmers, especially beginners.

New Jersey C. H. DREW

Minnesota quads

Here is a photo of the quadruplet calves born on our farm September 10, 1959. There are two bulls and two heifers, all healthy and doing fine. As a matter of fact, the two bulls are gaining pound for pound with the single-birth calves their age.

These calves were very large at birth, weighing from 58 to 65 pounds each. The cow, a heifer last year, gave birth to a healthy set of twins, which was our first multiple birth in 40 years.

You will notice pictured from left to right Dr. C. H. Wetter, veterinarian, Princeton, Minn., Walter Lamprecht, and myself, Dennis Lamprecht. Dr. Wetter said it was the only set of quads he has seen in 40 years of practice.

You will notice that two of the calves' front legs are a bit crooked, but by the time they were a week old they were normal. The photo was taken when the calves were less than one day old.

Dr. Carl Clifton, University of Minnesota dairy cattle geneticist, stated that, in the past 22 years as a cattle geneticist, he has heard of only three other sets.

Minnesota DENNIS LAMPRECHT

The frequency with which multiple births occur in dairy cattle is not definitely known because of inadequate reporting. With this word of caution, Dr. L. O. Gilmore, dairy geneticist at the Ohio Agricultural experiment station, is of the opinion that the following frequency of multiple births appears to be reasonable estimates:

Twins	**1:**	**87**
Triplets	**1:**	**7,621**
Quads	**1:**	**665,338**
Quints	**1:**	**58,084,061**
Sextuplets	**1:**	**5,070,738,548**

One would expect the following occurrence of multiple births in the United States:

202,508 pairs of twins per year,
2,319 sets of triplets per year,
27 sets of quadruplets per year,
1 set of quintuplets every 3 years and 3½ months,
1 set of sextuplets every 287 years.

Letter from India

It is nearly a decade since I began getting your highly valuable and indispensable journal. Every year I neatly bind copies into an album, which is more useful than any textbook.

Recently an operation for cataract trouble impaired my vision. Now my wife is reading each and every article to me.

All I can say is that Hoard's Dairyman gives me inspiration, and answers heart-searching questions to one who is honest in his profession, whether dairying or any other profession.

Madras, India D. SADASIVAM

"Without bias . . ."

May I congratulate you upon your editorial, "Bouquet to U.S. News." Like Hoard's Dairyman, this article in U.S. News renders a real contribution — fundamental without fear, and comprehensive without bias or prejudice.

New York FRANK N. DECKER

"Second-class citizens"

Your March 10 issue contains the article, "You can't afford 50-bushel corn," by R. A. Jarnagin.

No one could possibly contest the reasoning of your writer as it is at once patent and obvious that the more one has to sell from a given acreage the more he will receive in returns provided — and this is an important proviso — the price remains the same.

The last published figures I saw for corn production in this state (Ohio) were 54 bushels to the acre. This figure is somewhat better than the national average.

Suppose farmers, generally, were to increase their inputs with more and better fertilizers, better weed control, and better management practices and were to attain a 50 per cent increase in production. Here in Ohio that would mean a yield of 81 bushels instead of 54. (Your author wants 100.) Increase these yields by such an amount and real disaster — not profit — would be the lot of the entire Corn Belt.

It is said that for each 10 per cent increase in production of hogs the price decreases 2½ times as fast, or 25 per cent, so that, actually, farmers, generally, get more money in actual dollars and cents

(Continued on page 506)

NEW IDEA MAKES THE FIRST TRUE CONDITIONER

Not a crimper, not a crusher, NEW IDEA combines the best aspects of both methods for faster curing and leafier hay!

Exclusive NEW IDEA design teams big, self-cleaning rubber crushing roll with fluted steel pick-up roll. The result — faster drying than with a crimper. More aggressive, plug-free feed-through than with two smooth rolls. Less leaf loss and less damage to tender leaves.

NEW IDEA is easiest to use. Balanced for easy one-man hook-up. Convenient roll pressure adjustment for varying field conditions. Not damaged by rocks. Conditions a full 7-ft. swath. Puts up better hay in one less day. Can be hitched behind NEW IDEA semi-mounted mower for one-time-over mowing and conditioning.

See your NEW IDEA dealer. Or mail coupon below for free literature.

Simple, efficient pick-up and feed-through with exclusive NEW IDEA fluted steel and rubber roll combination.

NEW IDEA

A PRODUCT OF Avco CORPORATION

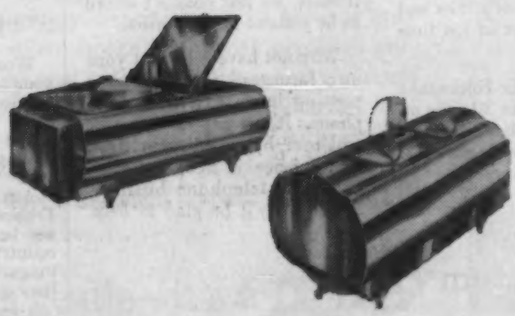
NEW IDEA Box 280, Coldwater, Ohio Please send free literature on the NEW IDEA Hay Conditioner.

Name_____

Address_____

City_____ State_____

MUELLER*



*The brand name **"EM-BEE"** is discontinued on Paul Mueller Company products. It is being replaced by the new name, **"MUELLER,"** in order to gain better company and product identity.
Paul Mueller Co., Springfield, Mo.

(Continued from page 504)

for fewer hogs than they do for more hogs.

To a lesser degree, perhaps, but, nonetheless, just as certainly, an increase in corn yield would lower price to the point where only the exceptional producer could exist.

The problem in agriculture today is not how to increase production but, rather, how to produce for market needs; in other words, "production control."

I have little interest in so-called product merchandising as a whole. The limitations of capacity of the human stomach puts a definite and absolute ceiling on consumption.

Increase in markets can only come from population increases and through upgrading of diets.

The agriculturist today must find a way for controlling production while he is stimulating markets.

In 1958, industrialists cut production of all products from refrigerators, to automobiles, to davenports and laid off their workers by the hundreds of thousands. All such laid-off workers were subsidized through their unemployment compensation laws.

Had the industrialist not cut his production but, rather, found ways to increase it, you can only imagine the economic impact. Were the nation loaded with a commodity like steel through maintenance of 100 per cent capacity production, our last steel strike would have completely failed because no shortage or emergency would exist and the stock of steel on hand would have put a definite ceiling on prices.

As farmers we are going to have to learn that someway, somehow, we must limit production to demand — whether through voluntary action, government control, or some other really effective method — if we are to become part and parcel of economic growth instead of second-class citizens.

Ohio L. H. ROEMISCH

Horns a thing of the past

I'm glad to find someone else who doesn't like horns.

I'm a Holstein breeder and I take off the horns when calves are 7 to 10 days old. Horns may be pretty to look at, but are not for the thinking man or woman.

The more shows and sales I attend, the fewer horns I see. Horns, as far as I'm concerned, are a thing of the past.

North Carolina BILL MURDOCK

Disagrees with Guernsey placings

I would disagree violently with the placing of the first place animal in the practice judging on the Guernseys. I think 1's udder is terrible, and by the time she is an old cow, it will hang on her like a burlap bag with the top closed.

Looking at the front page pictures of the Guernsey now and 50 years ago, I believe this breed has improved the least in type, and one reason could possibly be the judging such as shown on page 212.

The Guernseys do not seem to show the strength of other breeds, and anyone who has raised several breeds will tell you that Guernsey calves are the hardest to raise. Could not this be because the qualities seemingly picked out in judging them do not seem to lead to hardiness?

Personally, I would rather see a cow with a little flesh on her, and any Guernsey carrying any seems to be automatically penalized. Possibly the fragility of the Guernsey is one reason the public has recently swung away from them. We have had Guernseys for around 20 years and probably always will have them, but lately we also have some Holsteins. I could wish for more size, hardiness, better udders, and even more flesh in the Guernseys.

Indiana MRS. HAROLD C. SNYDER

The official judge made this a very close placing. He admired the "power" and substance of cow No. 2, but felt the winner showed more dairy character and was cleaner and sharper throughout. Even though production records had no influence on the final placings, following is a comparison of the official production records available on the two cows in question:

	Age	Days	Times	Milk	Test	Fat
Cow No. 1	2	365	3	14,610	4.3	631
	3	365C	3	19,488	5.2	1,019
Cow No. 2	2	305	3	7,683	5.6	427

"Must" reading

Am enclosing my remittance for Hoard's Dairyman magazine. We enjoy it very much. Your articles seem to be timely. Usually an article is in the magazine which is similar to what is happening at that time on the farm.

Have used several good suggestions and look forward to reading it. It's "must" reading for almost any type of farming.

Iowa OBERBROECKLING BROS.

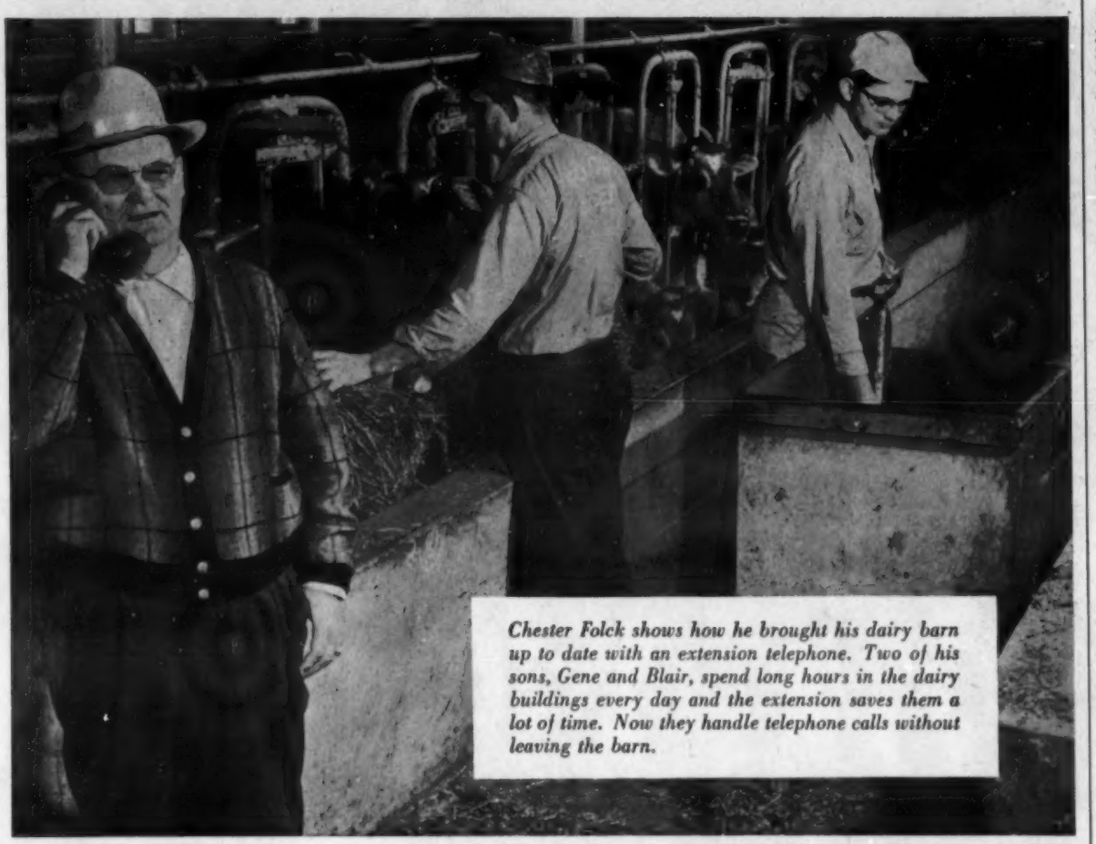
"Keeps me posted"

Would like to say that I enjoy your magazine very much. I farmed before coming into the army and have plans for when I get out.

Was especially interested in your "Career" articles.

Am presently stationed in France. It is very interesting to see how farming is done in other countries. My folks send your magazine on to me every chance they get; it sure keeps me posted.

Armed Service FRED L. BADER



Chester Folck shows how he brought his dairy barn up to date with an extension telephone. Two of his sons, Gene and Blair, spend long hours in the dairy buildings every day and the extension saves them a lot of time. Now they handle telephone calls without leaving the barn.

Here's how an extension telephone saves a farm family over 25 days a year

Glenn Folck uses this office telephone to sell purebred Jerseys all over the country. Incoming calls are answered on this telephone. If someone in the dairy buildings is wanted, Glenn rings a bell in the barn simply by pressing a button. "When a man calls you," says Glenn, "he doesn't want to be kept waiting. That barn extension is the answer."

75 head of fine Jersey cattle keep Chester Folck and his three sons busy from early till late on their purebred farm near Springfield, Ohio. Two of his sons, Gene and Blair, spend full time in the dairy buildings. The third, Glenn, handles most of the family's business affairs and spends a good part of his time in the office.

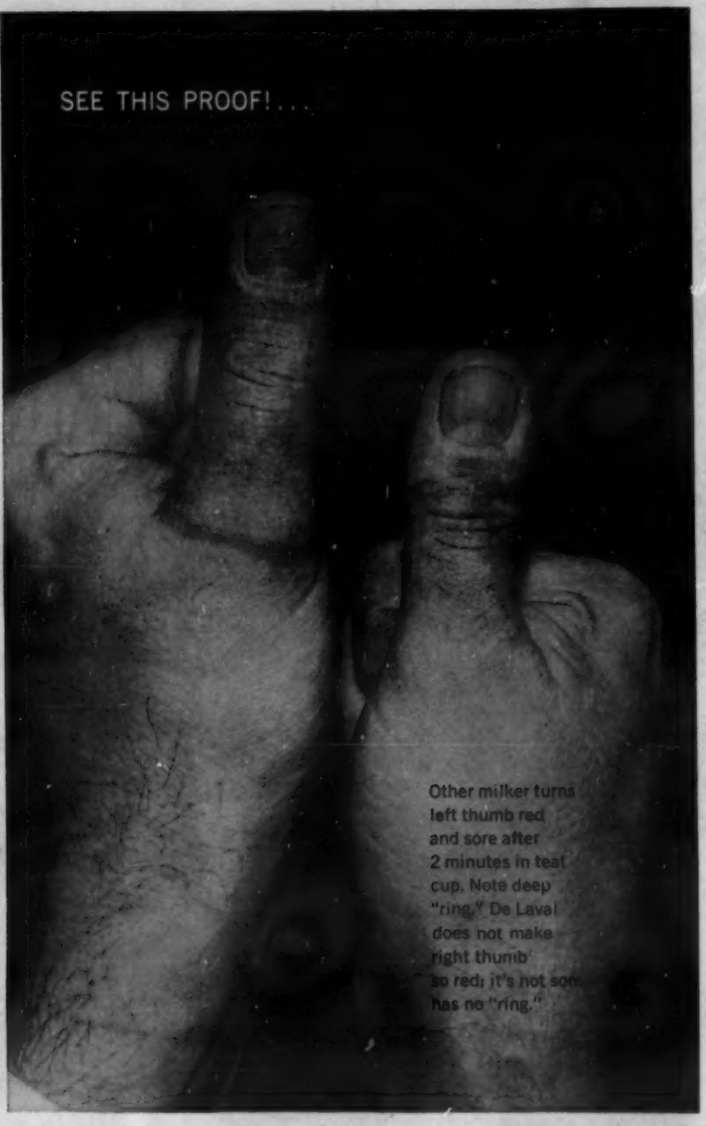
In a usual day the Folcks take or make some 20 to 30 calls on an extension telephone in their barn. Most are business calls. Some are long distance.

"Without that extension phone, we'd have to keep people waiting on the line while we run to fetch someone from the barn," Chester Folck says.

"We figure we'd lose at least a half a day a week between the house and the barn. For the little it costs, we just couldn't afford to be without that extension."

Why not have a look at your own farmstead with an eye to putting in an extension telephone. It can pay its way over and over by saving your time. Convenience is a bonus. Just call your telephone business office. They'll be glad to help.

Bell Telephone System


SEE THIS PROOF!...
Other milker turns left thumb red and sore after 2 minutes in teat cup. Note deep "ring." De Laval does not make right thumb so red; it's not sore, has no "ring."

At last! A suspended milker so gentle it can actually help you prevent mastitis

De Laval's New Suspended Milker is more gentle than *any* other bucket... so gentle it can actually help you fight mastitis. The "thumb test" proves it!

Other suspended milkers turn a thumb red and sore—and they have the same effect on your cows' more delicate tissues. Make the "thumb test." Feel the rough pounding and pulling of your milker *just once*, and you'll never again put anything but a De Laval on your cows.

Only De Laval can give you gentle milking because only De Laval combines *narrow-bore liners* with *precision pulsation*. Other milkers use large-bore liners that increase impact on cows' teats, often causing udder damage and mastitis. Narrow-bores fit snug, get milk out with a gentle massaging action. And De Laval's precision pulsation gives you a smooth, even flow of the right amount of vacuum and pressure that's essential for gentle milking. Result – far better udder health, far less mastitis.

Here's how to prove it for yourself: Call your De Laval Dealer. He'll send a suspended unit out to you for a FREE TRIAL. Then make the "thumb test" with both milkers. We rest our case on your results! The De Laval Separator Co., Poughkeepsie, N. Y. *or* 5724 N. Pulaski, Chicago 46, Ill. De Laval Pacific Co., 201 E. Millbrae Ave., Millbrae, Cal.

Larger pail opening and curved, smooth surfaces make it fastest, easiest to clean... 10% down, up to 4 years to pay.

if it's gentle—it's a De Laval

DE LAVAL

SUSPENDED MILKER

WORTH MORE BECAUSE THEY WORK MORE!

What we like about Chevrolet's ability to get more work done is that it can be proved in short order—in just one pass over a beat-up pasture trail or out in the field. Try it. See if you aren't able to maintain faster safe speeds with those new torsion springs soaking up vibration and road shock. You can cut down your trip time appreciably. Your loads are better protected. You feel less tired after a day's work (handling's extra easy). And your Chevy lasts longer because it doesn't have to take the daily beating an ordinary front-axle truck does. You'll figure Chevy's roomier, more comfortable cab is worth more, too. Add on Chevrolet's tried and true economy, its well-known reliability and high trade-in value—you just can't find a sounder truck investment than this one. Drive one and see what you think. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

STURDI-BILT TO TAKE A BEATING '60 CHEVROLET TRUCKS

HOARD'S DAIRYMAN
FOUNDED IN 1885
75 YEARS OF LEADERSHIP

81,114 Entries . . .

from all 50 states, Canada, and several other foreign countries. TWO PERFECT SCORES!

FOR several years the Hoard's Dairyman Cow Judging Contest has had an international flavor and this year's contest (30th annual) was no exception. There were 81,114 entries and they came from all 50 states, from Canada, New Zealand, Puerto Rico, Peru, Israel, and Southern Rhodesia.

It has been five years since a perfect score was recorded . . . this year two Midwestern Holstein breeders, Earl Phillips, Beaver Crossing, Nebr.; and W. L. Carroll, Rosemount, Minn., accomplished what only 31 people have done in 30 years. They both judged the five classes correctly for scores of 500. To break the tie, they were asked to fill out reason's cards and Phillips was the winner.

Harold Kaeser, nationally-known dairy cattle judge and veteran coach of the Ohio State Univeristy dairy cattle judging team, had several reasons to be happy with the outcome of this year's contest. His son, Donald, won first prize in the junior division; his family won first prize in the family division; and one of his 10-man college teams won first in the college division.

Other winners included George Ott, Sr., vocational agriculture teacher from Bangor, Pa.; the Montgomery County Jersey Calf Club, Rockville, Md.; and the Royal County High School, Front Royal, Va.

Generally speaking, the scores ran unusually high, which speaks well for the classes and the judges. Some individuals with scores of 492 could break only into the Honorable Mention group.

Phillips only two-time winner . . .

Winning judging contests is nothing new for Earl Phillips, who owns a top registered Holstein herd with his brothers at Beaver Crossing, Nebr. He won the Hoard's Dairyman contest in 1944 (only individual to win the contest twice) and last year placed fourth. In 1942 he won the Little American Royal judging contest at Kansas State College and in 1949 was an alternate on the Kansas State dairy judging team. He received his B. S. degree in dairy husbandry in 1950. Incidentally, in 1941 his mother, Mrs. Kenneth Phillips, won third in the Hoard's Dairyman contest.

The Phillips family purchased their first registered Holsteins in 1924. Operating a Kansas farm that had been in the family five generations, in 1957 they were forced to move as a result of the Tuttle Creek Dam project. They relocated in Seward County, Nebraska, on a 320-acre farm of which 200 is under flood irrigation. The herd consists of 54 milking cows and 50 head of young stock. Last year's DHIA average was 13,635 M., 515 F. on 47 dairy cows.

At the National Convention Holstein Sale in Omaha last June, a Phillips consignment, Valla Vista Ramona Skoky, Excellent, topped the sale at $7,200 and later was grand champion cow at the Wisconsin State Fair.

W. L. Carroll, who has farmed near Rosemount, Minn., since 1934, is in partnership with two of his four sons. They own two 240-acre farms and rent an additional 200 acres. Their herd of 125 registered Holsteins includes 59 milking that averaged 11,641 M., 423 F. last year on DHIA. In 1957 the Carroll family received Honorable Mention in the family division of the Hoard's Dairyman Cow Judging Contest.

Ag teacher wins fourth . . .

Lewis Porter, Elgin, Ill., won undisputed third place with a score of 498. There was a three-way tie for fourth, with George Ott, winning vo-ag instructor, having the highest reasons score. He was followed by Max Parks, 4-H club leader from Bronson, Mich.; and Herbert Weisheit, a member of the Purdue University judging team.

Jack Dexter, Fort Collins, Colo., had the lone score of 494 which ranked him seventh. There was a 12-way tie for eighth. Based on reasons, Hugh Knoop, member of the winning Ohio State University team placed eighth, followed by W. Levis Phipps, Jr., Wilmington, Del.; Stanley Murphy, Tully, N. Y.; J. R. Stevenson, Opelika, Ala.; and Lee Smith, of Grants Pass, Ore.

The following receive Honorable Mention: Jake Konrad, Matsqui, British Columbia, Can.; Myron Wehr, Ohio State University; Loren Hamm, Hooker, Okla.; Colene Shoop, McComb, Ohio; William Messix III, Queene Anne, Md.; Wesley and Ron Ibbetson, Kansas State University; James Elliott, Adohr Farms, Camarillo, Calif.; Paul D. Payne, Texas A and M; and James Kyle, Marionville, Mo.

Winner teaches and farms . . .

High man among the 1,170 vocational agriculture instructors, an all-time high number of entries, was George Ott, Sr., who has been a teacher since 1927. Born and raised on the farm which he has operated since 1944, he received his B. S. degree in agricultural education from Pennsylvania State University in 1927 and became the first teacher of agriculture at Bangor High School in 1935, a position he has held since that time.

A member of the state dairy judging team while attending high school and member of a winning 4-H judging team, he coached the first Pennsylvania FFA dairy team to judge at the National Dairy Cattle Congress in 1947 which received a Gold Medal Award (his son George, Jr., was a team member). Since 1944 he has operated the *(Turn to page 540)*

SENIOR WINNER
Earl N. Phillips
Beaver Crossing, Nebr.

VO-AG WINNER
George Ott, Sr.
Bangor, Pa.

JUNIOR WINNER
Donald Kaeser

FAMILY WINNER
Donald, Kenneth, Harold Kaeser
Columbus, Ohio

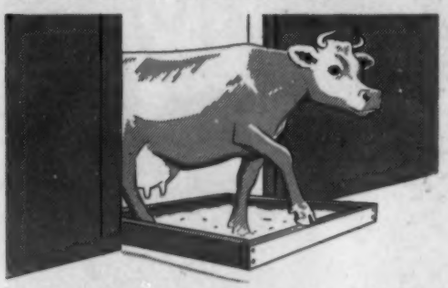
Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

HOOF ROT STRIKES IN SPRING

Frequently hoof rot will appear in the spring when damp, muddy pastures offer breeding places for the organisms which cause this disease.

An animal is exposed to hoof rot anytime a sharp object bruises its hooves, which opens the soft tissue between the claws or on the



heel. Bacteria in the soil then enter the foot and start an infection which, in some cases, can move all the way to upper leg points.

Be sure to watch for lameness and reddening or swelling just above the hoof. These are signs of hoof rot. If spotted soon enough, your veterinarian can stop the infection with antibiotic or sulfonamide compounds. An oral organic iodide added to the feed may help.

One of the best ways of controlling hoof rot is to eliminate wet areas around water troughs and feed bunks where the cattle gather. You can treat wet areas by spraying a mixture of barn lime containing 5 per cent copper sulfate (blue vitriol). Another method that has proved successful on many dairy farms is to put this mixture in a box where cattle have to walk through it each day.

GRAIN TO COWS SETS RECORD

A report by the Crop Reporting Board states that although the over-all total fed to dairy cows in 1959 was below that of 1957 and 1958, the average feeding rate per cow hit a record high of 2,050 pounds. An estimated total of 19.8 million tons was fed during the year.

The cows' menu was about the same as in 1958 with corn, oats, and commercial dairy feed accounting for 84 per cent of the total. Homegrown feeds, however, accounted for 51 per cent of the total grain and concentrates, as compared with 50 per cent in 1958.

An average of 31.8 pounds of grain and concentrates was fed per hundredweight of milk as compared with 31.6 pounds in each of the two previous years. The cost of this feed per hundredweight of milk averaged 91 cents, 1 cent more than the previous year.

PROTEIN—CAKED UDDERS UNRELATED

Research conducted at the Illinois experiment station reveals that feeding high levels of protein before and after calving does not prevent caked udder troubles.

Previous research has shown that the blood protein falls to a low level at calving time because of the demands for protein to make colostrum. This drop is more critical in heifers, since they start with a lower blood protein level than older cows.

In the Illinois experiments the scientists injected cow blood serum albumin directly into the blood streams of several heifers that had caked udders. This injection raised their blood protein level, and the caked udder troubles disappeared almost entirely in 24 hours.

Because of the high cost of such injections, high levels of protein were fed just before and after calving in an effort to raise blood protein levels. Starting six weeks before calving, they fed six pounds of soybean oil meal daily, in addition to good-quality hay.

This heavy feeding of protein did not increase blood protein levels of these heifers or reduce the number of caked udder cases. However, none of the heifers fed the high protein ration had severe cases. On the other hand, the high protein ration did not increase severity of caked udder, as commonly believed.

NEW TREATMENT FOR SHEEP PARASITES

Sheep threadworms, which used to "brace" themselves and defy all worm medicines, can now be killed by certain cadmium compounds.

University of Illinois veterinarians say that these compounds have been used commercially to control swine ascarids. Now they offer an effective way of controlling sheep parasites.

Test lambs given various levels of cadmium iodide, oxide, and chloride have remained free from infection for three to four months. However, treatment must be balanced against possible weight losses resulting from the use of such compounds. Lambs undergoing cadmium treatments lose from four to six pounds.

Although threadworms seldom kill an animal, they weaken lambs, cause diarrhea, and retard growth. By the time infected animals are a year old, they usually develop an immunity to the worms. Adult animals, however, remain carriers and transmit the threadworm larvae to newborn lambs.

PINE NEEDLES CAN CAUSE ABORTION

Research at the Colorado experiment station has shown that consumption of pine needles by pregnant cows may cause abortion.

The dangerous time is during the latter part of the gestation. None of the beef cows involved in a three-year study aborted in less than 170 days following breeding, regardless of the length of time they had been eating needles. However, in the last three months of the gestation period, abortion occurred within as little as two weeks after the animals were put on a daily ration of pine needles.

This study confirms earlier experiments in Canada where it was found that pregnant range cows fed fresh pine needles would either abort or deliver dead or small, weak calves which rarely survived.

Apparently, feeding an adequate ration will not stop cattle from eating needles. In certain instances, they observed range cattle of all ages eating needles greedily while receiving a satisfactory ration. The experimental animals ate five pounds of needles per day and probably would have eaten more.

In areas where there are abortion problems that cannot be traced to a specific cause, it is recommended that pregnant cows be taken off pasture containing pine needles.

CORN CLUB WINNERS' SECRETS

Would you like to know what makes a winner in a corn-growing contest?

A Rutgers University crops specialist has made a study of the practices followed by young farmers who won awards in the state's 100-bushel corn club last year.

While ideal weather in some areas receives some of the credit, the records show that certain practices were universally used by the top winners. For example, all of the winners:

—used 2,4-D for weed control
—cultivated only once
—planted adapted hybrids
—used plenty of fertilizer
—planted their corn thick

The 4-H winner, Daniel Casale, planted corn in 36-inch rows with 16,480 plants to the acre at harvest time. He used manure produced on his family's dairy farm, along with 500 pounds of 5-10-10 fertilizer in the row at planting time per acre. He produced 158.2 bushels of No. 2 shelled corn per acre.

The second-place winner plowed down a sod that had been covered with manure and 250 pounds of 10-10-10. He added 200 pounds of 5-10-10 with the planter in the row. His plant population was 17,206 to the acre.

The three top contestants controlled weeds so well with chemicals and skillful seedbed preparation that they cultivated only once.

SUDAN GRASS GOOD INSURANCE

According to L. A. Jensen, North Dakota agronomist, a warm-season, annual grass, Piper Sudan, produces excellent late summer pasture if moisture conditions are favorable.

Farmer experiences and eight years of experiment station trials have shown that high production can be obtained on Sudan grass pasture during late summer.

Many farmers first turned to Sudan grass to meet an emergency situation — and have continued to plant it every year.

One North Dakota dairyman put in 10 acres of Piper Sudan on summer fallow. During July and August he chopped feed every morning. He fed his 24 milk cows half the load then and the other half at night. This took him about an hour a day and brought excellent returns. It made the best use of the acres seeded to the crop. His gross returns from Sudan grass averaged $143 per acre.

Late May or early June is best for seeding Sudan but seeding can be delayed until the third or fourth week of June in northern areas.

75 years ago...

If you ever feed grain to your cows, feed it now while the piratical flies are sucking out their blood, annoying them in every way, and keeping them from eating. They must have some way of getting even with these flies and a good ration of bran and corn meal is the best we have ever tried.

W. D. Hoard

When should a cow be bred?

We have evidence that 25 per cent of our cows are rebred too soon after calving. This practice may be causing more breeding trouble than any single disorder in our national dairy herd. And those early-bred cows produce less.

by R. E. Erb

EVERY dairyman, repeatedly, must answer the question, "When should this cow be bred?"

The practical problem is to determine whether a cow is in condition for breeding. Ask yourself these questions:

_____1. Did the cow calve normally and did she have any trouble during or after calving?

_____2. Did she pass the placenta within 12 hours after calving?

_____3. When she was in heat was the mucus crystal clear? If not clear, was it slightly cloudy, distinctly cloudy, or purulent?

_____4. When she was lying down was there any discharge containing pus? Usually this material will dry on the upper part of the tail.

If the **answer** to the **first three** questions is **yes** and to the fourth **no**, then:

_____5. Has it been at least 60 days since calving or abortion? If the answer is **yes**, then:

_____6. Has it been at least 16 days since the last heat? If the answer is **yes**, then:

_____7. Call your inseminator or breed the cow naturally near the end of standing heat.

A calf each year . . .

How many would start to plant corn 35 days early? Yet, when it comes to rebreeding, this is what happens to many good cows.

If a cow is rebred 85 days after the last calving, she will calve again near 365 days. Though ability to conceive is high in most cows by 60 days, the rate is even higher between 75 to 100 days.

Cows first serviced sooner than 50 days require an average of 2½ services for conception. Less than 40 per cent actually calve again in 11 to 13 months.

In comparison, if first breeding is delayed for 60 to 90 days, **one less service is required.** Nearly 3 out of 4 calve between 11 to 13 months after the last calving.

In a Cornell experiment, the average calving interval was 374 days when first services were delayed 60 to 90 days.

A cow rebred in 50 days after calving will calve again in about 330 days. This is not long enough for best production. Such a cow would have to be dried off by 270 days in lactation or have a dry period of less than 60.

The author is a professor of dairy science, Washington State University, Pullman, Washington.

We found, by studying over 8,000 Washington DHIA records, that more often than not, with a short dry period, the cows are further penalized. This affects her next producing period.

Even after adjustment is made for the short dry periods, cows with calving intervals between 320 to 339 days produce nearly 10 per cent less than those calving regularly at 360- to 379-day intervals. If the cow is in heat 60 to 65 days after calving, seriously consider waiting one more heat period.

We find too much reasoning like this: "Bossy is in heat today and it's been 52 days since calving. If I wait until next time it will be over 60 days!" A lot of dairy wives have to make last year's dress do because of this kind of reasoning. It's better to wait at least 70 days. The cows will be more fertile and they will produce more milk.

Heat periods tell a story . . .

The sexually-mature unbred cow is supposed to come in heat at 3-week intervals. In dairy herds, about 2 out of every 3 heats occur within an 18- to 25-day interval. Less than 15 per cent recur at exactly 21-day intervals.

Carefully observing and recording all heat periods is a must. No other single observable symptom is more important because:

1. Its occurrence shows ovary is working.
2. The start of heat is important in order to know the most favorable time to breed.
3. It shows (generally) when a previously-serviced cow has failed to settle.
4. The cycle tells a story to you and to your veterinarian.

The pituitary gland in the head of the cow, the ovaries, and the nervous system perform the basic functions causing regular heats and ovulation.

Estrogen and progesterone, two hormones produced by the ovaries, are essential for normal functioning of the entire reproductive process from heat period to actual calving. Estrogen seems mostly responsible for the outward signs of heat. A bit of progesterone speeds ovulation.

In a few minutes the sperm are carried by uterine contractions to the upper end of the Fallopian tube. The upper end of the Fallopian tube is called the infundibulum. Its "finger-like" projections nearly surround the ovary.

When the egg is released, about 8 to 16 hours after the end of standing heat, the sperm are waiting. Fertilization (one sperm beats all others into the egg) takes place right away.

Initially we have a one-cell calf. Soon this one cell divides into two, two into four, etc.

It is six or seven days before this fertilized egg arrives in the uterus. During this time, progesterone from the yellow body on the ovary has been busy telling the uterus to get its calf bed ready. If the uterus is healthy, this is no problem. But **if it isn't healthy,** here is where plenty of trouble can start.

The placenta begins to form (again progesterone is required) at about 14 days but implantation isn't complete until about 40 days after fertilization. The first 40 days are the most critical period of the calf's life. If the calf lives this far, it has covered one-half the lethal hurdles to the milking string.

Embryonic loss is costly . . .

Under average conditions we can expect to lose about 1 out of every 4 fertilizations before normal calving time. These losses vary from herd to herd depending on conditions.

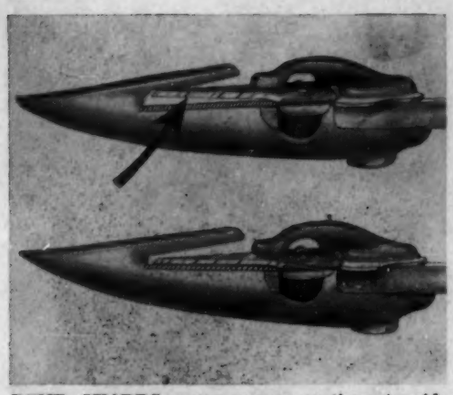
Using research data from New York, Wisconsin, and Washington we estimated the number of calves to expect from 100 services under ideal, average, and poor conditions.

	Ideal	Average	Poor*
	%	%	%
Breedings	100	100	100
Fertilizations	95	76	40
Embryos dying	10	21	45
Early abortions	4	5	7
Late abortions	4	5	7
Death at birth	4	4	5
Living calves	75	49	14

*Cows have or had an infected reproductive tract.

We believe 100 living calves from 100 services is beyond achievement. However, one controlled experiment demonstrated that 75 is possible. This is far above the "average" of 49 calves per 100 services.

You say you are doing better? Are you? The average group *(Turn to page 522)*

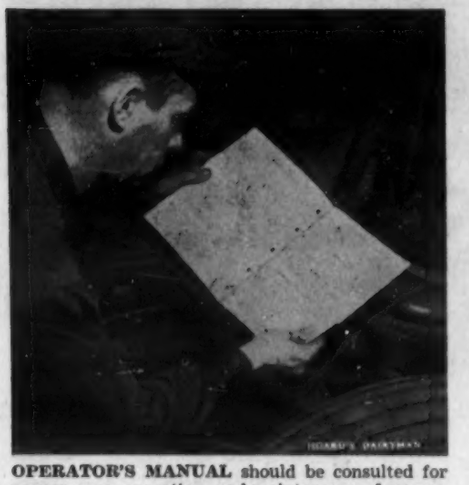


BENT GUARDS cause mower sections to ride high and tear hay rather than cutting it clean.

When your mower clogs

. . . the cause may be in your driving, mower adjustment, field condition, or mower design. Here is how to save time cutting hay this season.

by Burton S. Horne



OPERATOR'S MANUAL should be consulted for proper care, operation, and maintenance of mower.

BENDING GUARD back into alignment can be done with a heavy rubber hammer and weight.

IT'S up front that counts. If it hasn't got it up front, it just hasn't got it." This slogan could well apply to mowers. When you're mowing, what's up front?

On the tractor seat you are in command of the situation. Having decided when mowing should start, you pull the mower into the field. Looming ahead as big as you please is a stand of the most beautiful green grass, lush, tender, well fertilized, and ripe for mowing. You drop in the cutter bar, open up the throttle, and "clug"!

You dismount from the tractor and unclog the mower bar. You do this twice, three times, four, and many more during the first round. After spending 2 hours to make 1 round in a 1¾-acre field of grass fertilized with nitrogen, you lose patience. The mower is the object of your anger. Should it be?

This description of the reaction of a mower in these grasses is not fictitious. This has been the experience of many farmers in Pennsylvania. Similar experiences are recorded from 12 farmers in 8 states participating in a nitrogen application program.

What causes this excessive clogging in heavy growth? Is it the fault of the mower design, the operator, or both?

Limp lower leaves . . .

A clear and accurate definition of a problem is the beginning of its solution.

In heavy yields of grasses, the lower leaves of the plant do not receive the necessary sunlight and become limp, turn yellow, and dry out. These leaves are tough and are not always cut when they reach the knife. They bunch up and clog the mower. Some are pierced by the guard point and start a buildup that clogs the knife.

This succulent green grass grows so rapidly that sometimes the stems are not strong enough to hold the plant upright. It envelopes over the guards ahead of the knife and leads to clogging.

In light of these observations, it appears that the design of the mower and the guards present the major reason for clogging. The suspect is convicted before the trial.

We know that driving techniques, field conditions, and mower adjustments contribute to mowing problems in ordinary hay stands. Why not analyze the total situation in regard to heavy grasses?

Clogging causes studied . . .

A team of 12 persons (engineers, farmers, branch servicemen, territory managers, field representatives, agronomists, and extension personnel) did just that. Each time the mower became clogged, the team inspected the bar, photographed it, and determined what caused the clogging. Four field trials were conducted with three mowers and tractors.

To illustrate what we mean by driving techniques, physical conditions of the field, and mower adjustments, let's take a brief look at the first field trial.

Four stops were caused by the cutter bar's inability to pick up mashed down grass. The grass was mashed down, run on, and very badly mangled by a tractor and cultivator. This rig turned around on the grass when cultivating an adjacent cornfield whose rows ended against the grass field. This was recorded against the physical conditions of the field.

One stop occurred when making the turn on the first corner. The operator attempted to make a quick right-hand turn, on the run. The bar clogged tight as it whipped around into the uncut grass, entering at an angle that tends to push the grass sideways rather than "head on." Record this step against driving techniques.

One stop was caused by clogging around guards 1, 2, 3, and 4 (counting from the inner shoe toward the outer shoe). Upon close inspection it was determined that these guards had become loose, leaving too much space between ledgers and sickles. This stop was the result of machine adjustment.

Two stops occurred in uncut, upright grass. A mixture of green grass leaves and also some that were yellow and brown, hair-pinned around two adjacent guards next to the inner shoe. There was no evidence of the field's physical condition or driver error as being the cause. These stops were recorded against guard, or machine, design.

Stops analyzed . . .

Stops in all four field trials were so inspected and recorded. The final analysis was:

- Driving techniques, 38 per cent
- Physical conditions of field, 31 per cent
- Mower design, 25 per cent
- Poor adjustment, 6 per cent

Driving techniques, *(Turn to page 545)*

The author is an associate professor of agricultural engineering at Pennsylvania State University.

A SHARP, WELL-ADJUSTED MOWER is an important step toward the elimination of clogging, even in heavy stands of legumes and grasses. Less power is needed, and a clean mowing job results.

Use the "one-two" punch on WEEDS

They are very persistent, prolific, vicious, and stubborn. However, they are no match to a well-thought-out program of spraying, cultivating, mowing, or smothering.

by E. P. Sylwester

THE AUTHOR examining a lush growth of weeds "on the other side of the fence." It is every farmer's obligation to keep weeds from going to seed.

NEVER in the history of mankind have people had more ready access to chemicals of all kinds. This does, however, involve responsibility on the part of the user in chemical "know-how."

Weed control chemicals are designed to make life easier, more profitable, and more enjoyable, as well as bringing comfort to those who suffer from ragweed and poison ivy.

With the use of pre-emergent and post-emergent sprays in many of our crops, we give the crops a head start over the weeds. This results in cleaner crops, greater stewardship of the land, and more efficient farming.

But chemicals, wonderful aids that they are, are not the complete answer to all of our weed problems. They are designed first and foremost to "implement and supplement" good cultural weed control programs. In this "golden age" of chemical weed control, many people tend to minimize the good cultural practices of weed control.

Herein lies a real danger in that we may forget the tried and true practices which for years formed the background for all weed control practices. We must remember that our ancestors did relatively well with no chemicals whatsoever at their disposal. What they lacked in knowledge of weed life histories and chemicals they made up by hard work, sweat, brawn, smother crops, mowing, scything, early plowing, and so forth.

To illustrate what we mean by striking a happy medium between cultural and chemical weed control, let's take lawns as an example.

By judicious spraying with 2,4-D we can practically eliminate all broad-leaved weeds from our lawns. There are some exceptions to this but, in general, it is true. By the judicious use of such chemicals as chlordane or the disodium methyl arsenate compounds we are able to accomplish the almost impossible task of taking a broad-leaved, annual, shallow-rooted crabgrass plant out from among the narrower-leaved, deeper-rooted, perennial bluegrass without any apparent injury. This control of broad-leaved and grassy weeds in lawns is a delicate task and must be expertly done.

Even though almost 100 per cent perfect, the chemical control of weeds in lawns is not an end in itself. The homeowner is merely "spinning his wheels" unless the good cultural practices of reseeding, top-dressing, fertilizing, judicious mowing, and heavy watering are brought into the picture.

What has been said of lawns is quite largely true of permanent bluegrass pastures. If legumes are present in abundant numbers, it is more advisable to undertake a rigid mowing program. This will keep all annual pasture weeds from going to seed, it will weaken the perennials, and it will not hurt any legumes in the area.

If, on the other hand, legumes are absent, timely spraying with 2,4-D will very effectively control most annual and perennial pasture weeds. Thus, a good, thorough, repeated program of either spraying or mowing can rid our pastures of 95 per cent of the objectionable weeds in a two- to three-year period.

Again, chemical or cultural weed control is of no avail, regardless of how thoroughly done, unless we prevent heavy overgrazing, heavy grazing when it is extremely wet, pasturing very early in spring when forage has not as yet recovered from previous winter, and pasturing extremely heavy in the fall before the grass goes into its winter dormancy.

The prevention of overgrazing plus liming and fertilizing to build up a good, vigorous sod will pay big dividends in pastures just the same as it does in lawns.

So we see again that the mere chemical control of weeds is of no great value if suitable cultural practices to establish a good, aggressive grass cover are not used as follow-up programs.

Fence row seedings discourage weeds . . .

If fence rows and roadsides are so heavily infested with annual, broad-leaved weeds that all we do is kill the weeds with 2,4-D, it will be a long time before desirable grasses invade such areas to help control the weeds. In other words, a good fence row seeding program, or roadside seeding program, will go a long way toward discouraging weed encroachment, establishment, and maintenance. A heavy stand of grass on roadsides and in fence rows is a prime deterrent to a weed problem. Spraying plus a heavy stand of aggressive grass can jointly solve the problem.

The spraying of broad-leaved weeds such as buttonweed, cocklebur, or morning glory in stubble where the legume seeding has been killed out, is of very little avail if at the same time we do not practice either early plowing or extremely close mowing to prevent the grassy weeds from going to seed. Grassy weeds in stubble land are not killed by spraying with 2,4-D. Very often if the broad-leaved weeds are taken out, the grassy weeds have more "living space" and will multiply even more abundantly. Here again, the wise landowner strikes a happy medium as to whether it is best to use chemicals or cultural practices which will prevent the weeds from going to seed.

Smother crops good defense . . .

In the use of smother crops such as sorghum, soybeans, Sudan grass, or millet, we have crops that, even without the use of chemicals, can make growing pretty tough for such perennial weeds as Canada thistle, perennial sowthistle, quack grass, and so forth. If summer fallowing is practiced before late-planted crops are sown, and if summer fallowing is practiced as soon as crops are removed in the fall, a tremendous amount of damage will be done to the perennial weed pests without actual loss of crops.

In the use of late planted smother crops there is ample opportunity to use a "pre-planting" treatment with such chemicals as 2,4-D or Amitrol to give the weeds a "one-two" punch, first with chemicals and then with smother crops.

In pre-emergent spraying of corn and soybeans, it is always best to prepare a weed-free, finely-pulverized seedbed in advance of using the chemicals. Here is a good example of how each cultural and chemical practice, properly done, aids in getting the crop off to a head start over the weeds. This is important because the weeds that are missed at the time of the first cultivation generally cause the trouble at harvest time.

Remember, weeds of all kinds thrive on a "hit and miss" program of control. Remember, too, that no weed or noxious, brushy plant can long withstand a long-range and well-thought-out program of control extending over a period of years. A haphazard program of control, fighting them "tooth and nail" for one season and allowing them full reign the next is never going to get anyone very far in a thorough weed control program.

Wisely used, the "C.C.C." of weed control (cultural - chemical - combination) can reduce weed problems to a minimum. **THE END**

The author is an extension botanist and plant pathologist at Iowa State University.

Fertilize for the most dollars

Select the fertilizer which best fits your crop, soil, and method of application. Learn how to apply phosphorus.

by R. L. Cook

IT SEEMS a paradox to say that fertilizer dollars may return more when invested in good soil than in poor soil. Perhaps we should have a look at, "What is a good soil?". This may tell us where to place our dollars. Better still, we may learn how to fit our soil for the fertilizer and how to select our fertilizer to fit the soil.

There was a time when a dealer had only one fertilizer (probably 2-12-6) and perhaps we had access to only one dealer. There was only one choice to make — how much to apply — and we guessed at that answer, or decided according to our pocketbook.

Acid soils tie up phosphorus . . .

Acid soils should be limed to pH 6.5 or slightly higher. If the pH is below 6.5, iron in solution will react with the phosphate in the fertilizer and tie it up as insoluble iron phosphate. At a pH above 7.0, calcium is so plentiful that it reacts with the phosphate to form insoluble tri-calcium phosphates also not readily available to phosphorus-hungry plants.

Because the least tie-up occurs when soil pH is between 6.5 and 7.0, one should add the right amount of lime at once. This may be impractical. Some relief may come from using correct methods of application and more careful selection of the fertilizer itself.

We read much these days about banding fertilizers, broadcasting, bulk spreading, and side-dressing. Is there a one best method? Should nature of material be considered?

There really is no simple answer or one best material or method. You should know your materials and use the method suitable to material, soil, crop, and season.

Two philosophies . . .

Broadly, there are two philosophies of fertilizer use. One is to "feed the soil," the other is to "feed the plant." If we adopt the first, we simply apply enough fertilizer to bring the nutrient levels up to a predetermined desirable or necessary level.

It is necessary to have a background of field plot and soil test research so we know how high the soil test must be to feel assured the crop will get all the nutrients needed for satisfactory yields. We then apply enough fertilizer to get such tests.

If the soil is acid and high in clay and soluble iron compounds, it will require tremendous amounts of phosphate, perhaps more than we can afford to invest all at once. After that we can apply only a maintenance amount, just enough to keep up the tests.

The other alternative is to apply just enough fertilizer to obtain maximum yields of the currently growing crop. This should be done in such a way that the plant roots get first choice. In other words, we spoon feed the crop.

The best way of doing this is by application at planting time, in bands close to the seed. Most modern corn and potato planters are designed to place fertilizer in bands entirely separate from the seed but close enough so seeding roots quickly grow into the band.

Check phosphorus solubility . . .

Insoluble phosphorus fertilizers should always be mixed with soil because we depend upon the soil acids to break them down and make the phosphorus available. The best known example of such a material is raw rock phosphate. Chemically, the phosphorus in raw rock exists as a basic calcium phosphate so it requires an acid to dissolve it. That is why in a fertilizer plant they use sulfuric acid to break it down into superphosphate, a soluble material available to plants and used in the manufacture of mixed fertilizers.

Strongly acid soils will dissolve rock phosphate fairly fast. If you plan to farm such soils without lime, it isn't a bad idea to use some raw rock for part of your needed phosphorus. However, if you wish to grow clover or alfalfa for either hay or green manure, and everyone should be planning that way, you will need to apply lime. Then the raw rock breaks down too slowly. It is better to select a material which is more easily soluble.

Know your phosphorus . . .

There are some other phosphate materials insoluble in water, but quite soluble in soil solutions. Calcium metaphosphate is an example. Also there are by-product materials carrying phosphorus as dicalcium phosphate. Also, heavy ammonification of superphosphate changes some of the soluble monocalcium phosphate to dicalcium or even tricalcium forms. Many of our present-day fertilizers contain some of these insoluble forms. If they account for more than 60 per cent of the total, the fertilizer should not be applied in bands, but should be broadcast and mixed with the soil. Then the soil acids will make the insoluble phosphates available to plants.

On the other hand, if your fertilizer is largely water soluble, say over 60 per cent, it should not be broadcast and mixed with the soil. It will be changed quickly by chemical reactions into highly insoluble forms before plants have a chance to pick it up. Such fertilizers should be applied in bands or in granules so the phosphorus contacts as little soil as possible.

What about granules?

Putting soluble phosphate in granules has the same effect as banding. A considerable amount of soluble and, therefore, readily available phosphate is introduced to what will be the root zone without having much of it touched by soil particles. Thus, chemical reactions are held at a minimum.

You must not, however, stir the soil a few hours after the granules are introduced. Any tillage should be done immediately after application. This is because the soluble fraction of the fertilizer in the granule will move out into the soil in a matter of hours. It will require a month, though, for it to move more than a half inch into the soil.

A sphere of soluble phosphorus thus remains immediately around the original granule. Plant roots grow freely through the zone and due to the high concentration, can pick up the phosphorus in *(Turn to page 530)*

The author is head of soil science at Michigan State University.

Points to remember:

FERTILIZER	APPLY
Lime	Acid soils, bring to pH 6.5
Raw rock phosphate	Mix in acid soils
Water-soluble phosphate	In bands near seed
Granulated phosphate	Plow down or in bands
Starter fertilizer	All crops, regardless of soil test
Liquid fertilizer	In bands at planting time
Potash	Each crop every year
Nitrogen	Plow down in spring, side dress corn

EXPERIMENTAL CORN PLANTER applies two fertilizers at once, one deep, the other shallow. It is designed to place bands to side of seed and at any depth to 6 inches below the seed.

TWO SETS OF EARS were taken from the same field. Rows on left received 10 pounds borax as a sidedressing while the rows on the right received no additional boron. The blank stalks reduced yields from 21 per cent to 6 per cent in the same field.

BORON-DEFICIENT alfalfa on the left was untreated. Alfalfa on the right received 40 pounds borax per acre; yielded twice as much.

CORN LACKING ZINC is shown in center. Both row in which farmer is standing and row in front of him received 400 pounds 4-16-16. But row in which he is standing received an addition of 10 pounds zinc sulfate; row in center received none.

Trace elements

can make the difference

Boron, copper, zinc, manganese, iron, and molybdenum are found in all soils, but the amount may be too low for top yields.

by K.C. Berger

TRACE elements are needed by all crops that grow and are so called because they are needed only in extremely small quantities. However, these small quantities are essential to the plants and are just as important as are the major plant food elements (nitrogen, phosphorus, and potassium).

In some areas, boron deficiency occurs more widespread than does the deficiency of any other trace element. Millions of acres of alfalfa show boron deficiency at some time or other during the growing season. This is particularly true in times of drought, and this severely cuts alfalfa yields.

A lack of boron also can cause serious winter-killing of alfalfa. The deficiency symptoms appear first on the upper part of the plant, giving the alfalfa an umbrella-like appearance because the upper part of the plant is shortened. It also may have a yellow or reddish color in the upper leaves.

Boron deficiency occurs most generally on sandy soils, on all light-colored soils, and on all alkaline soils. On heavier silt and clay loam soils, top-dressing once in a rotation with 300 to 600 pounds of borated fertilizer will supply alfalfa needs for 2 to 4 years.

On sandy loam soils, applications of 200 to 300 pounds per acre of borated fertilizer every year or every other year often give better results. Under this treatment, alfalfa stands can be maintained almost indefinitely.

Although boron is required for growth by all plants, it does not take much of it in the form of a borate to be harmful to some plants, such as peas, beans, and the small grains.

Avoid injury to grain . . .

When a borate is applied (alone or in a mixture with other fertilizer materials) near the time of seeding alfalfa with a grain nurse crop, it should be broadcast and worked into the soil a week or two before seeding to avoid injury to the grain.

Borates alone or in a mixture should never be applied directly in contact with the seed of grains, beans, peas, and seeds in general. Even relatively low rates will seriously retard or entirely prevent germination.

This danger of injury does not exist when borates are applied on established alfalfa in the amounts and manner previously indicated.

In some areas, boron deficiencies are also severe on red beets, sugar beets, cabbage, and cauliflower. In many cases, boron deficiencies cause blank stalks and barren ears in corn where the population is high and fertility level is high.

Supply needed copper . . .

Recently, on many low-lying soils, severe copper deficiencies have been found. Crops that have a right requirement for copper are small grains, corn, and many vegetable crops, such as onions. (Corn also shows severe zinc deficiency on the same type of low-lying soils.)

The application of 2 pounds of copper oxide plus 10 pounds per acre of zinc sulfate mixed in the starter fertilizer corrects this deficiency. Copper and zinc deficiencies have also been found to some extent on light-colored, upland soils, although the deficiency is not so severe.

Copper deficiencies also have been found in potatoes on light-colored soils in some areas. Yields have been increased by at least 50 bushels per acre by *(Turn to next page)*

The author is a professor of soils, University of Wisconsin.

OATS NEED COPPER. Area in foreground between stakes received no copper; yield was 1½ bushels per acre. Oats in background received 10 pounds copper oxide per acre; yield: 75 bushels.

ALFALFA was grown on same soil as oats in previous picture and corn in following picture, a peat soil deficient in copper. Alfalfa on the right is greyish-green in color and very stunted.

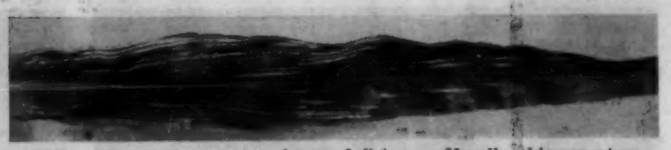
LACK OF COPPER severely stunts corn; causes youngest leaves to twist and curl, tips of upper leaves to break off. On low-lying soils, add 2 pounds copper oxide and 10 pounds zinc sulfate.

small amounts of copper oxide mixed in the starter fertilizer. The most spectacular responses to copper have been with small grains. On some peat soil, copper is so deficient that the yield of small grains without copper is zero. With small amounts of copper applied with starter fertilizer, yield is 80 to 90 bushels per acre.

Manganese deficiency also occurs, particularly on alkaline soils and with small grains. The so-called Grey-Speck disease of oats, which is a streaking of the oat leaves, causes a stunting of the oats and a severe lack in yield. This can be corrected by putting manganese in the starter fertilizer at the rate of 25 to 30 pounds per acre or by spraying on manganese sulfate at the time of weed spraying, using 5 pounds per acre of manganese sulfate applied with 15 to 25 gallons of water.

One spray application completely corrects the deficiency of manganese for small grains. Manganese deficiency also occurs in soybeans and, in some cases, on green beans as well. In this case, the manganese deficiency symptoms first appear on the upper leaves as small, black specks near the veins about the size of pinheads. Later when the deficiency is more severe, the leaves between the veins turn a light yellow-green color while the veins remain green. One spray application has doubled the yield of soybeans.

Manganese deficiency also can occur in highly alkaline soils on red beets and sugar beets. In this case, the beets also can be sprayed with manganese sulfate at the rate of 5 pounds per acre, or manganese sulfate can be applied in the starter fertilizer at planting.



CORN LEAF shows severe boron deficiency. Usually this symptom is not seen when boron deficiency causes blank stalks and barren ears. Transparent streaks appear on the upper leaves of the plant.

Zinc deficiency symptoms on corn appear when the corn is very small. The second leaves show a yellow streaking and if it is severe, the area between the veins gradually appears white to yellowish color in the upper leaves. The older leaves show a purplish color at the margins. As the corn gets older, the plants are severely stunted and the older leaves turn purple, then brown, and finally the entire plant turns brown and dies. In some cases, when zinc deficiency is severe, corn that has tasseled out is only 18 inches tall.

Many of the vegetable crops grown on peat and muck soils show a zinc deficiency. It can be corrected by broadcasting from 25 to 40 pounds of zinc sulfate per acre before planting. When corn or other crops are stunted because of a severe zinc deficiency, it cannot be corrected by spray applications during the growing season.

Legumes need molybdenum . .

Molybdenum deficiency, while not very widespread, generally occurs on acid soils. Legumes such as alfalfa and red clover show the deficiency first. It appears as a light, yellow-green color on the upper leaves. However, when the soil is properly limed, molybdenum deficiencies rarely occur.

The amount of molybdenum needed to correct the deficiency is very small; usually 1 or 2 pounds of sodium molybdate per acre will completely correct any deficiencies, should they occur. This can be applied by mixing with the fertilizer that is applied broadcast and worked into the soil, or mixing with starter fertilizer applied with the grain at the time of seeding the legume. Much more work needs to be done on molybdenum for areas of deficiency.

Remember, while the amount of trace elements needed for most of your crops is very small, these amounts are just as essential as are the larger amounts of the major nutrient elements. Remember, also, not all our soils are deficient in trace elements. In many cases where the deficiencies do occur, they are extremely severe and cut yields severely.

Watch your crops during the growing season for signs of deficiency symptoms. One of the cheapest ways to find out whether or not they are needed is to purchase small quantities of the trace elements and put out strips across your grown field. Where needed, you can easily see the response. Remember, a lack of boron for alfalfa is very widespread in some areas, causing not only reduced yields, but, in many cases, severe winter-killing of alfalfa. This can be corrected by the application of 25 to 40 pounds of borax per acre once in the rotation, or by applying 300 to 400 pounds of borated fertilizer for alfalfa, such as 0-10-40 B or 0-10-30 B.

Remember, trace elements are needed for top yields. **THE END**

A doctor asked a woman patient her age.

"I never tell anyone my age," she answered coyly, "but as a matter of fact, I've just reached 21."

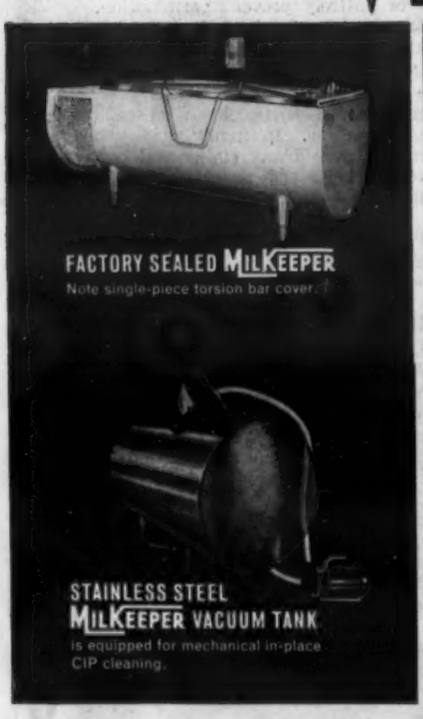
"Indeed," said the doctor, "what detained you?"

You Name It!

MORE TO CHOOSE FROM, MORE FOR YOUR DOLLAR

MILKEEPER®

BULK FARM COOLING TANKS


FACTORY SEALED MILKEEPER
Note single-piece torsion bar cover.
STAINLESS STEEL
MILKEEPER VACUUM TANK
is equipped for mechanical in-place CIP cleaning.

Yes, name the style, design and capacity MilKeeper you want —*and get it!* Creamery Package makes a complete line of bulk farm cooling tanks so that you can be dollar-sure of getting the tank that meets your needs best, backed by coast-to-coast company-owned branches plus a nationwide dealer organization.

Shown here are four styles of CP MilKeeper Tanks. *You name it*—capacities 100 gallons to 1000! All CP MilKeepers meet 3A standards.

MILKEEPER
COSTS NO MORE...GIVES YOU SO MUCH MORE

Factory-Sealed Models with Capillary-Tube Direct Expansion Cooling—patented and made exclusively by CP. Simplest, fewest moving parts—as trouble free as your household refrigerator—easiest to install.

Triple Clad Zinc and Vinyl Exterior. Most durable finish, especially developed for rugged farm use. Grit blasted, zinc metallized and then double vinyl coated (not painted).

Torsion Bar One-Piece Cover. Can be lifted with two fingers. Seals out all foreign matter. Motor and agitator raise with cover for ease of cleaning.

CP Sturdi-Weld Refrigeration Surface. You can see the sturdi-weld surface highlights (satin polished by special machines) but you can't feel them! Completely sanitary.

C-I-P Cleaning. All CP MilKeepers can be equipped for cleaning-in-place. Ask about the new CP Kleen-Keeper Kit for almospheric tanks.

LET HIM HELP YOU... AUTHORIZED DEALER MILKEEPER

The Creamery Package Mfg. Company
1243 W. Washington Blvd., Chicago 7, Illinois, Dept. HD 50
Please send information on:
☐ Factory-Sealed MilKeeper
☐ Stainless Steel Remote MilKeeper
☐ In-place cleaning of my present tank
☐ Vinyl-Covered Remote MilKeeper
☐ Stainless Steel Vacuum Type MilKeeper
Name
Address or R.F.D.
City State

THE Creamery Package MFG. COMPANY
General and Export Offices: 1243 W. Washington Blvd., Chicago 7, Illinois

Atlanta 8, Ga.
Boston 78, Mass., (Belmont Station)
Buffalo 3, N. Y.
Charlotte 3, N. C.
Chicago 7, Ill.
Dallas 7, Texas
Denver 2, Colo.
Houston 3, Texas
Kansas City 1, Mo.
Los Angeles 23, Cal.
Memphis 5, Tenn.
Minneapolis 1, Minn.
Nashville 3, Tenn.
New York 36, N. Y.
Omaha 2, Nebr.
Philadelphia 40, Pa.
Portland 14, Ore.
St. Louis 8, Mo.
Salt Lake City 1, Utah
San Francisco 3, Cal.
Seattle 4, Wash.
Toledo 4, Ohio
Waterloo, Iowa

CREAMERY PACKAGE MFG. CO. OF CANADA, LTD. 207 King Street, West - Toronto 2B, Ont.
Write your nearest CP Branch for name of nearest dealer

1 MILKING WILL PROVE ONLY Maes MASTITIS-CONTROL INFLATIONS CAN MILK YOUR COWS SO WELL!

Read These *ENTIRELY* UNSOLICITED LETTERS THEN ORDER ON BLANK

Jan. 2nd, 1960

"LESS MASTITIS"

"I have used the Narrow-Bore inflations on 50% of my cows and I like them so well that I want all my cows milked with MAES Narrow-Bore inflations. The cows have better udder health *with less Mastitis*, teat injury (cuts and sores), heal twice as fast and the cows milk faster and cleaner than ever before. If a dairyman has any concern for the health of the herd, he would use MAES Narrow-Bore inflations. Also cows that would kick when milked with other type inflations are now as gentle as a lamb."

Paul McNees, Cynthiana, Ky.

Dec. 16th, 1959

"LICKED MASTITIS"

"We sure *licked the Mastitis* when we got the MAES inflations."

Martin Mitchell, R #2, Keytesville, Mo.

Dec. 24th, 1959

"MASTITIS ALMOST A THING OF THE PAST"

"In December 1957 I ordered my 1st set and have been using the MAES ever since. I find they are the best I have used on our machine. We find they stay on the cows much better and with our herd of over 40 cows, our *Mastitis problem is almost a thing of the past.*"

Albert I. Jensen, Hood River, Ore.

Aug. 31st, 1959

MONTANAN LIKES MAES FOR "BREAKING IN" HEIFERS

"We particularly like your inflations for breaking-in heifers. They seem to think they are being petted instead of milked, and they part with that white stuff most graciously—well, most of them do!"

G. D. Paxson, Stevensville, Montana

Dec. 11th, 1959

"HAVEN'T HAD BIT OF TROUBLE"

"Have been well satisfied with my last order of inflations. Since using them, *haven't had a bit of trouble from Mastitis.* I'm sure anybody that used them will reorder as they sell themselves."

Loren Oelke, La Crosse, Wisc.

A FEW MORE MAES DEALERS WANTED • WRITE TODAY!

DETACH ALONG DOTTED LINE and Order Now!

MAES MILKERS, INC.
DEPT. G-50, MARSHALL, MICHIGAN, U.S.A.

Save this Order Blank

THIS IS THE ORDER BLANK USED BY THOUSANDS OF SURGE OWNERS

Please Do Not Detach This Top!

MAES ORDER BLANK FOR REPAIRS OF SURGE MILKERS

Mail to MAES MILKERS, INC., Marshall, Mich. DATE..... 19.....

"INFLATIONS" is our business and we make the BEST!

BLACK SYNTHETIC RUBBER
Our black synthetic inflations, specially engineered for Surge users whose local conditions require synthetic. Will out-last and out-perform any synthetic on the market. The very best in black synthetic rubber. We don't know how to make them any better.

NEW NARROW-BORES
Narrow-Bore for Surge. We pioneered narrow-bores for DeLaval more than 20 years ago. Thousands of satisfied users from coast to coast. Our narrow-bores redesigned for Surge will milk as no other inflations can, - but do require a few days to break in your cows to the change from regular inflations.

NATURAL BROWN GUM RUBBER
Nothing better than our brown natural gum rubber inflations for Surge. Milk superlatively - never creep - cling perfectly to udder. No other inflations can match them. Thousands of dairymen from coast to coast refuse to use anything else.

USE MAES INFLATIONS AND FORGET ABOUT MASTITIS!

QUANTITY	DESCRIPTION	EACH	TOTAL
	LARGE A-S BLACK SYNTHETIC — for large teats	.85	
	MEDIUM A-S BLACK SYNTHETIC — for smaller teats	.85	
	NARROW-BORE A-S BLACK SYNTHETIC — The very latest.	.85	
	LARGE A-S BROWN RUBBER — for large teats	.85	
	MEDIUM A-S BROWN RUBBER — for smaller teats	.85	
	NARROW-BORE A-S BROWN RUBBER — The very latest.	.85	
	Crank Handle Inflation Brush A, for Medium and Large Inflations. Nylon bristles.	.85	
	Tapered Crank Handle Inflation Brush B, for Narrow-Bore Inflations. Nylon bristles.	.85	
	Pail Cover Gaskets, special for Surge. Pure gum rubber.	.45	
	Pulsation Tubes (from teat-cup shell to pulsator) 9" long, pure gum rubber, special for Surge. Nothing better.	.20	
	Black Stanchion Hose, pipeline to pail. Will last for years. Your Choice 6' 2.25 ☐ 7' 2.50 ☐ 8' 2.50 ☐ 9' 2.75 ☐		
	Cup Leathers for Surge Pulsator Pistons. Best grade leather.	.15	
	Teat Cup Claw Brush (short)	.25	
	Handling and Postage charges on orders of less than $10.00	.50	
	Be Sure Your Check Is For The Correct Amount	TOTAL	

Due to the sizeable increase in postage rates on February 1, 1960 we find it necessary to change our Free Shipping arrangement as follows:

WE PAY POSTAGE ON ORDERS OF $10.00 AND OVER.

Be sure to enclose 50c for postage on orders of less than $10.00. When C.O.D. shipments are requested you pay the postage. For Canada add 75c for export postage.

(Shall we ship C.O.D.?.....) Amount Enclosed $.....

NAME.....

R. F. D. NO..... POST OFFICE.....

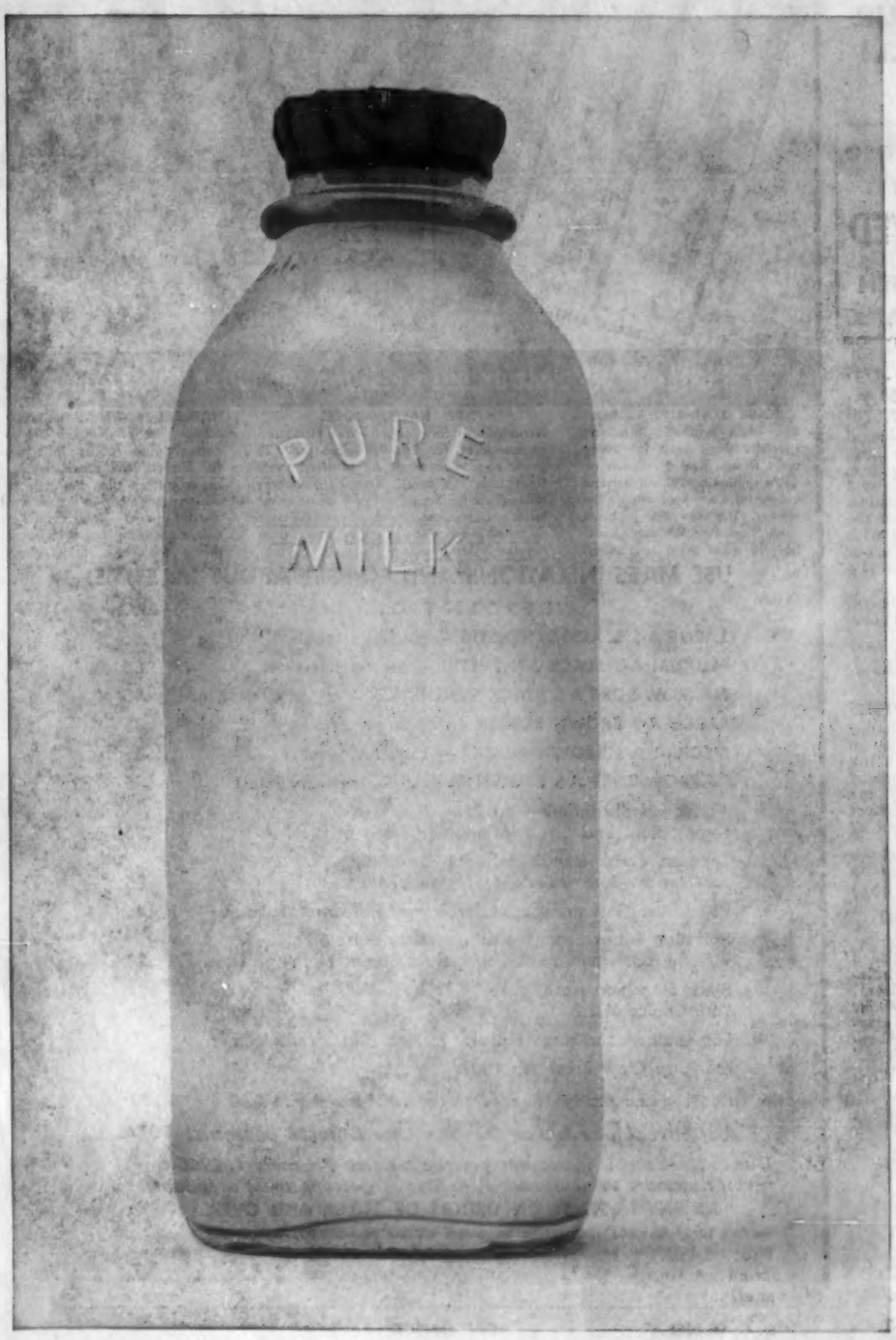
STATE.....

Super Mail Service! YOUR ORDER IS MAILED THE SAME DAY IT IS RECEIVED

Make remittance to: MAES MILKERS, INC. MARSHALL, MICHIGAN

NO ANTIBIOTIC IN THE MILK... ONE OF MANY ADVANTAGES OF AUREOMYCIN

The first wide-range antibiotic, used according to directions, helps keep cows at peak production... leaves no antibiotic in the milk



When you feed AUREOMYCIN* Crumbles, or AUREOMYCIN in formulated feed, your cows will be healthier and better able to reach maximum production because AUREOMYCIN aids in the prevention of bacterial diarrhea, foot rot and respiratory infections.

When you use AUREOMYCIN according to directions, you need have no fear that your market milk will be rejected because of antibiotic in the milk—you can't find what isn't there.

AUREOMYCIN is the only wide-range antibiotic accepted by the Food and Drug Administration for continuous feeding to lactating dairy cows. This acceptance was based, in part, on data* from experiment stations and Cyanamid tests which showed conclusively that, when fed according to directions, there was no measurable antibiotic in the milk.

So, if you follow feeding instructions, you can obtain the many advantages of AUREOMYCIN and be sure that your milk will be free of antibiotic residue.

When you feed AUREOMYCIN Crumbles, or AUREOMYCIN in formulated feed, according to directions, you can be sure that you are *doubly safe* — your cows are receiving the best health protection you can give them and you are safe from antibiotic residue in your milk. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

**AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

*Full information will be supplied on request.

CYANAMID
AUREOMYCIN
FOR DAIRY COWS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

ADA completes 20th year

Dairy leaders set sights on the 60's . . . hope to solve membership problems . . . John Moser elected treasurer.

DELEGATES from 48 states met in Chicago late in March for the 20th annual meeting of the American Dairy Association. The program followed a general theme of "where we've been and where we're going" and those in attendance vowed greater financial support of the nation-wide program of "speaking up for milk."

In his annual report to the membership, Lyman McKee, Wisconsin dairy farmer who has another year to serve as president of the organization said, "We have made progress in improving our bargaining power, it is true, but we can never overlook the very basic fact that all the bargaining power in the world would be worthless unless somebody wanted to buy and use what we have to sell. This, as simply as I can put it, is why the American Dairy Association is, and must be, an essential part of every dairy farmer's business operation."

M. J. Framberger, general manager, reported on the four major areas of the association's activities: Research and education, membership, advertising-merchandising, and public relations.

At the present time there are 22 projects in the product and nutrition research field being conducted at 15 different colleges and universities. Considerable attention is being given to the milk flavor problem; butter flavor and spreadability; greater uniformity and more pleasing flavor in cheese, cottage cheese, and buttermilk; and the addition of nonfat solids to fluid milk and cream products.

To counteract some of the adverse publicity milk has received, the ADA research committee has approved projects designed to find the causes of heart disease as well as supporting studies aimed at learning the effect of different levels of milk intake on the development of kidney stones.

In the field of market research, major emphasis is being placed on assimilating the information already available from the various studies that have been made to discover attitudes which strengthen markets and which attitudes weaken demand for dairy products.

The financial report showed that income in 1959 dropped slightly.

In this connection, Framberger warned, "How far we manage to move forward in the 1960's depends upon facing squarely the membership problems . . . and getting them solved. We cannot afford to stand still, not when we are yet a long way from the goal which was set back in 1953 as a minimum toward which we should strive."

The 2 per cent drop in ADA revenues during 1959 compared to 1958 caused extensive debate during the final afternoon session of the convention. An Arizona delegate, supported by a Michigan representative moved to require all states to follow the recommended policy on set aside. It was proposed that all states must have a 2 cents per hundred set-aside year around and 80 per cent of state revenues would be forwarded to the national office.

After prolonged discussion, the motion was tabled for one year. It was recognized that conditions vary from state to state and that more time may be needed for some states to get on the recommended schedule.

John Moser, Kentucky dairy farmer, was elected treasurer to succeed Dale Stewart, Nebraska. Franklin Teague, North Carolina dairyman, was elected assistant secretary-treasurer, while Milton Southwell, Georgia, was re-elected member-at-large on the policy-making seven-member executive committee.

Holdover officers include Lyman McKee, president; William Hitz, Iowa, vice president; C. A. Houlette, Ohio, secretary; and Armin Truttman, California, representing the membership-at-large on the executive committee.

Two individuals and three publications received Distinguished Service Awards.

Good Housekeeping magazine was honored on the occasion of its 75th anniversary for its wholesome and important influence in guiding American homemakers.

The Olsen Publishing Company, Milwaukee, Wis., was cited on its 50th anniversary, for providing excellent leadership in processing and distribution in the dairy industry.

Hoard's Dairyman, honored on its 75th anniversary, received the following citation: "Hoard's Dairyman holds a special place in the hearts of all dairy farmers as our own national trade magazine which not only does a marvelous job of keeping us informed about the latest in production methods but also provides the kind of spirited leadership which we have needed to goad us into action to meet our problems and to make progress."

Individuals honored were Dale Stewart, Madison, Nebr., who retired as treasurer of ADA; and Charles Stone, Lansing, Mich., who retired as secretary-manager of the ADA of Michigan. Both have served since 1942.

NEW! The mighty New Holland "818"—
the top-capacity forage-maker!

New Holland "818" Forage Harvester—loaded with work-saving features to speed your silage harvesting! The sure-cutting action of its Micro-Shear blades plus built-in strength and power keep the "818" going smoothly—day in, day out!

With finger-tip controls, you stop, start, or reverse the feed table to prevent clogging or to back out foreign objects . . . all from your tractor seat! The streamlined discharge spout swings its sturdy neck up to 180 degrees—you switch from rear to side-wagon filling instantly!

Quick-throw levers help you change attachments easily and fast: 6- or 8-foot direct cut, 6-foot windrow, and 1- or 2-row corn heads.

See your New Holland dealer's now. Ask him to give the "818" a try at *your* forage crop. You'll see how *real* forage harvesting is done fast and efficiently! Easy to own, too—with New Holland's special finance plans. New Holland Machine Company Division of Sperry Rand Corporation, New Holland, Pa.

Turn grass crops into silage fast
with the "818's" *full* 6-foot direct-cut unit. The wide 72" sickle bar means fewer trips around the field. Heavy-duty 4-bat all-steel reel with patented "snap-on" fingers moves material swiftly onto wide feed table. Dual-purpose divider separates standing crops from those being cut: pointed tip for short crops, rounded shield for tall stands.

Exclusive Micro-Shear Cutterhead
is the heart of the New Holland "818" Forage Harvester! The Micro-Shear has straight blades of hardened steel mounted at an angle on a cylinder. You can vary the cutting length from 7/32" to 2¼". Knife care is easy with the patented built-in sharpener—keeps your knives razor-sharp all the time!

NEW HOLLAND "First in Grassland Farming"

EDITORIAL COMMENT

A NEW HERD IN FIVE YEARS

AN OHIO dairyman, Floyd Groff, puts dairy cattle breeding in a somewhat different light when he says, "Five years from now I'll have a brand new herd of cows."

Isn't this true of all of us? To be sure, there will be a few old cows still in the herd five years from now but, for all practical purposes, the entire herd will turn over in that period of time.

When we recall how rapidly the past five years slipped away from us, we are impressed with the critical importance of paying more intense attention to the breeding program we are following in the herd today.

There are many dairymen who have forfeited their own planned breeding program. They depend entirely on the good judgment of the artificial breeding technician. We have visited on several farms where the results prove the responsibility was well-placed. With so much at stake, however, we believe the course of good business judgment dictates that the herd owner himself retain and fulfill this responsibility.

Oftentimes, the dairyman with a growing herd or with a large herd believes he does not have the time to devote to the study of herd sires and a planned breeding program. We believe it is all the more important for him to do so if he is to continue to improve the production and type of his present herd.

Even in artificial breeding all sires are not great, nor are all sires equal. Each have breeding characteristics in which they excel. Every mating, then, should be a planned mating and not be left to chance.

HERRINGBONE 50 YEARS OLD

WE NEVER fail to be impressed with the age of many of today's "new" ideas. This has been called to our attention repeatedly in the past few months as we have prepared material for this, our 75th anniversary, year.

Recently we received a letter from E. W. Morgan, a Hoard's Dairyman reader in Australia, enclosing an article from the Tasmanian Journal of Agriculture. The article very clearly documents that the herringbone type of milking shed was developed by W. L. Boyce of Casino, New South Wales, in 1910. It attained a quick burst of popularity and then the idea lay idle for several years.

It is interesting to note, however, that herringbone parlors built in 1911 and 1912 are still in use.

How long it takes for a new idea to impress itself upon the consciousness of people!

THAT SEEPAGE LOSS

WAITING doesn't often make money for a man but timing frequently does. A combination pays off when putting up grass silage. We have seen evidence of this on scores of farms in the past few years.

All too often we find a tower silo with a river of juice running out the base. Upon questioning, we find the farmer has put up direct-cut grass silage.

What few farmers realize is that this seepage may be carrying away as much as 13 per cent of the total digestible nutrients available in the original forage. Figure it out. If there are a hundred tons of grass silage in the silo and 13 per cent is lost, that means 13 tons of feed down the drain. Buy that much feed in the form of grain or purchased hay and we begin to appreciate the magnitude of the loss.

It does pay to wait and wilt. Timing is so very important when making silage. Plan ahead this year, not only to harvest all of that good forage in the field but keep it in the silo once you put it there.

75 years ago...

The dairy farmer is dealing with the most profound and mysterious of nature's laws, in the soil and in the cow. Shall men study those laws or shall they not? If they study them and also read what other students have found out concerning them, will it not help in understanding them? Is there any spot or place in human life where ignorance is safer to follow than wisdom?

Everywhere else in the great struggle of human existence knowledge is prized as a help to put men in harmony with nature's laws.

Yet we have farmers, yea, thousands of them, who sneer at knowledge, and who value darkness rather than light.

They do not understand the soil, and so they destroy the fertility of the farm. And with this dark record against them, they sneer at knowledge.

They do not understand the cow, and they are losing years of labor and dollars upon dollars in costly feed, trying to wring a profit out of a losing cow.

They live lives of hard, unrequited toil, out of harmony and understanding of the cow or the soil, in a true sense. Their boys flee from the farm in disgust, saying, "There is no chance here to exercise the brain that God has given me." The fathers are wrong. The boys are wrong.

There is no place in the life of the true dairyman for sneering at "book farming," at dairy papers, etc.

The men who sneer cannot point to richer farms or better herds of cows as proof of their wisdom. It is the men who believe in knowledge, who believe in study, who believe in keeping in touch with other students — these are the men who show improvement and who can show improvement and who can show the larger profit.

It is not the ignorant who sneer, but rather the wise who cheer, who know how to "keep in harmony with nature's laws."

And pay we must for our education. If we educate ourselves to sneer at knowledge, we shall pay for it in misdirected labor, in wasted effort and the destruction of both judgment and fertility in our land. That is what thousands of such farmers have done and are doing. One can follow their track from the Atlantic to the Middle West by the impoverishment of farms.

W. D. Hoard

$6,590 LOSS PER FARM!

FOR many years we have recommended strong base or quota systems in fluid milk markets. We have also urged dairymen to consider the use of a base-excess system as a national dairy program. No experience more clearly supports our contention than that of the Phoenix, Ariz., market during the past four years. Here's the story.

In the early 1950's the milk market was in fairly satisfactory condition. But union labor negotiated wage increases and the dealers passed the increased costs back to the dairy farmers. Later the dealers got into a price war and, once again, the farmers were forced to pick up the cost. Lacking bargaining power, farmers appealed to the Arizona legislature for a state marketing order but the legislature failed to act.

Then, in frustration, the dairymen petitioned the U.S. Department of Agriculture for a federal milk order. This was subsequently granted and the first full year under the order was 1956.

As readers of this page know, the use of production control bases or quotas is not permitted under a federal order. Without restrictions, then, the flood of milk began to roll off Arizona dairy farms.

Here is what has happened in a short period of three years.

— Class I (bottled milk) sales increased **60 million pounds.**

— But farm production of milk skyrocketed **123 million pounds.**

— The Class I price **dropped 40.6 cents** per hundredweight.

— The blend price to dairymen **dropped 61.2 cents** per hundredweight.

Let's relate these figures to what it means to the average producer. There are 432 farmers. They average about 100 cows and produce close to one million pounds of milk.

If the **production balance** of 1956 had been maintained into 1959, farmers would have earned $6,590 more per farm than they actually did in 1959.

We make these calculations on this basis: The actual cost of milk production in the Phoenix market, as determined by the University of Arizona, is $5.83 per hundredweight. The actual price paid for Class II milk was $3.18 cents last year. With the high costs of production in the Phoenix market, producers lose $2.65 on every hundredweight of Class II milk. This means that producers in the milkshed took a loss of $1,487,000 on surplus Class II milk in 1959, or $3,442 per farm.

With more milk being produced, the Class I price has been reduced under the federal order. This drop of 40.6 cents per hundredweight carried through on the sales of Class I milk last year meant a loss of $1,360,000 or $3,148 per farm.

Add it up! You get an economic waste of about $6,590 per farm.

Recognizing this great inequity, dairymen in the Phoenix market, beginning April 1, are trying to operate a market-sharing or quota plan outside the order. We hope it works. It is the only solution to their economic problem.

But the lesson is so graphic and so important that every farmer should see by this time that there is no point in producing milk for which there is not a good market. This is why year-round bases are so essential.

Questions from Our Readers

Prevent pond water odors

Do you have information on removing odors from pond water used in the home? This water is used for all purposes except consumption. It is run through a softener to get some filter action and remains clear throughout the year. However, during June, July, and August there is a bad odor.

There are fish in the pond, but we are willing to sacrifice the fish if treatment of the pond is necessary.

Iowa **R.M.D.**

Pond water odors can be kept at a low level if all vegetation is kept out of the pond. This includes all pond weeds such as lilies and cattails, and all algae growth. Most of the odor is caused by the oils given off from decaying algae.

Algae growth is best discouraged by eliminating the shallow water areas of the pond. Generally, this requires the use of a backhoe or dragline to steepen the banks of the pond. However, since this requires an additional capital outlay, the practice generally is not followed once the pond has been constructed.

Algae growth can be discouraged by keeping food materials out of the pond. This includes barnyard runoff, runoff from the heavily-pastured watershed, and fertilizers artificially introduced for fish production.

As soon as algae growths start in the spring, this can be controlled with copper sulfate. A solution can be mixed in a knapsack sprayer and the patches of algae in the shallow water near the pond edge can be easily sprayed from dry land. The normal rate of dosage for the entire pond is three to four pounds of copper sulfate for each acre-foot of water. If algae control is started early, the entire pond does not require treatment. Therefore, the amount of copper sulfate used should be varied accordingly.

Copper sulfate used in this concentration will not kill blue gills and bass, but it will kill bullheads, catfish, trout, and most of the rough fish. However, blue gills and bass also will be killed if an extensive growth of algae covers the entire pond and all of the pond is treated at one time. The bass are not killed by the copper sulfate but indirectly through the removal of oxygen from the water by the decomposing algae. Therefore, it is preferable not to treat the entire pond at one time. Treat portions of it at weekly intervals. This last statement applies if treatment is delayed until the entire pond is covered with algae.

Even though all vegetative and algae growths are discouraged, some odor will always be prevalent in pond water. This odor can be removed by passing the water through an activated charcoal filter. The activated charcoal can be placed in the same type of tank that is used for softening water with zeolite resins. Activated charcoal may be ordered through any water systems dealer.

—Ted L. Willrich
Iowa State University

Compressor for fly sprayer

In the article "Are your cows' tails quiet?" it tells of spraying cows with a compressor.

I have a tire compressor; could you tell me how I could use this and with what kind of a spray for easier application?

The article also mentioned using .05 of 1 per cent pyrethrin in sprays. Should this be added to all fly sprays?

Connecticut **K.W.E.**

While I do not know exactly the unit you are speaking of, it is probable that it can be hooked up and used, since any compressor would work.

In regard to pyrethrin in fly sprays, it is my experience that the addition of small amounts of pyrethrin has increased the efficiency of the sprays.

—J. L. Lancaster, Jr.
University of Arkansas

ED . . . **and EMMA**

"Hey, Em, where's the recipe for making coffee?"

MEYER Saves the Leaves

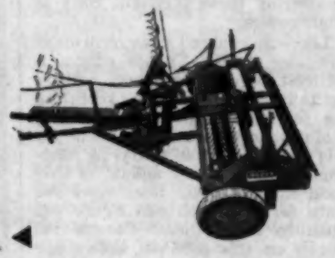
MEYER Hay Conditioner Model No. 675

Leaves Stay on Stems when SLOW ROLLED

MEYER Conditioning Rolls revolve slower . . . because they are fed by an exclusive, separate pick-up – and do NOT rely on high speed in order to pick up the hay. When high speed rolls are used, hay is grabbed up and forced through . . . leaves are lost. With the MEYER, the hay is lifted and fed through the slower-moving rolls which thoroughly but gently crack the entire stems and gently press the leaves. The leaves a MEYER saves put more dollars into your pocket, yet MEYER is priced lower.

New exclusive large-diameter rotary pick-up floats freely over rocks and terraces . . . lifts and feeds heavy or thin hay . . . on smooth or uneven, rocky ground. Exclusive non-clogging steel rolls crack entire stems uniformly . . . revolve slowly enough to keep leaves on stems. Both conditioning rolls are roller-chain driven.

MEYER is 1st choice because you can use your own trailer-type or side-mounted mower with Model No. 675 — or you can get Model No. 680 with built-in mower — an exclusive MEYER patented feature. Windrowing attachment is available.



MODEL 205 is built without separate pick-up for use on smooth fields without rocks or terraces. Exclusive non-crimping rubber pick-up roll is combined with smooth steel processing roll.

MEYER — maker of famous MEYER elevators — is the original and oldest manufacturer of hay conditioners — with over five years more experience than all other makes.

Write for New Literature, Prices, and Name of MEYER Dealer

MEYER MFG. CO.

MEYER MFG. CO., BOX 7963, MORTON, ILL.
Please send complete information on MEYER Hay Conditioners . . . at no cost or obligation. I am interested in Model No. ☐ 675 ☐ 680 ☐ 205

Name_____

St. or R.F.D._____

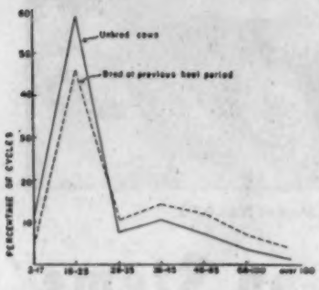
Town_____ State_____

When should a cow be bred?

(Continued from page 511)

shown in the table represents a 60 to 90 day nonreturn rate to first service of about 70 per cent. It represents a services/conception ratio of 1:67. How many consecutive years does any herd average more than this?

You can suspect embryonic loss when 35 to 40 per cent of the repeat services occur 25 days after the previous breeding. The accompanying graph shows that 30 per cent of the cycles of unbred cows are shorter than 18 days. For



REPEATING COWS have more long cycles that do unbred cows.

cows bred at a previous heat period the percentage of long cycles is about 20 per cent higher.

Causes of irregular heats . . .

Even among apparently normal cows and heifers one cause is embryo loss. The egg is fertilized but the embryo fails to survive. The next heat period is delayed, depending on when this failure occurs. In reality, this should be called a symptom since the basic causes of embryo loss may originate from genetic, physiologic, or pathogenic conditions.

About 6 per cent of our cows have one or more heat periods after they are safely in calf. Generally such heats are abnormally short in duration. Regular pregnancy examinations would prevent butchering these pregnant cows as nonbreeders.

Likewise, unbred cows have many irregular cycles. This is why it is difficult to diagnose early embryo mortality in the cows repeating for service one or more times.

Many cows have silent heats. By this we mean the ovary is functioning but the cow shows no outward signs of heat. Such cows are quite fertile if you can figure out when to breed them. Careful research on this problem shows one or more silent heats are most likely to occur during first 60 days after calving, but some occur later.

A disturbing factor in data we analyzed is the association of irregular heat cycles and infections of the reproductive tract.* With the exception of vaginitis, other types occur with an abnormally high percentage of short cycles. A large number of these cows, sooner or later, are diagnosed as cystic. Sometimes cystic ovaries are rather generally characterized. Actually, these may be severe leading to almost constant heat (chronic bullers), or to no signs of heat (anestrus) for almost indefinite periods unless treated.

In the normally-cycling cow one ovary or the other (sometimes both) goes through several stages. Prior to heat, a follicle develops and in it is a maturing cow-egg. At this time, estrogen (a hormone necessary for heat and ovulation) is produced. After the cow is out of heat the follicle ruptures, releasing the egg for fertilization. This leaves a cavity in the ovary. This cavity immediately begins to fill up with rapidly-growing yellow body tissue.

The yellow body produces another hormone, progesterone, which finishes preparing the uterus for pregnancy and its successful maintenance. In the cystic-ovary cow, generally, it is the follicle which fails to rupture. Other follicles frequently form which also fail to rupture. Such a cow may be in heat more or less constantly or not at all.

Less frequently, the yellow body becomes abnormal, forming large imbedded luteal cysts. When this happens the cow fails to come in heat.

In the unbred cow the yellow body reaches maximum size and function in 6 to 8 days and begins to wane around 14 to 16 days, allowing the cow to grow another normal follicle and come in heat. Then, if the yellow body fails to form normally and function properly, we can expect a short heat cycle. If it functions longer than normally, we can expect a long cycle. Frankly, we do not know how to correct these irregularities.

Fortunately, most cows have a few irregular cycles and then become regular. In some way the delicate hormone balances are upset. Trying to correct this with hormones has been disappointing.

In time, we will learn the basic causes and improve efficiency of treatment. In the meantime, the cows must be successfully bred or sold as nonbreeders.

Is cycle length important?

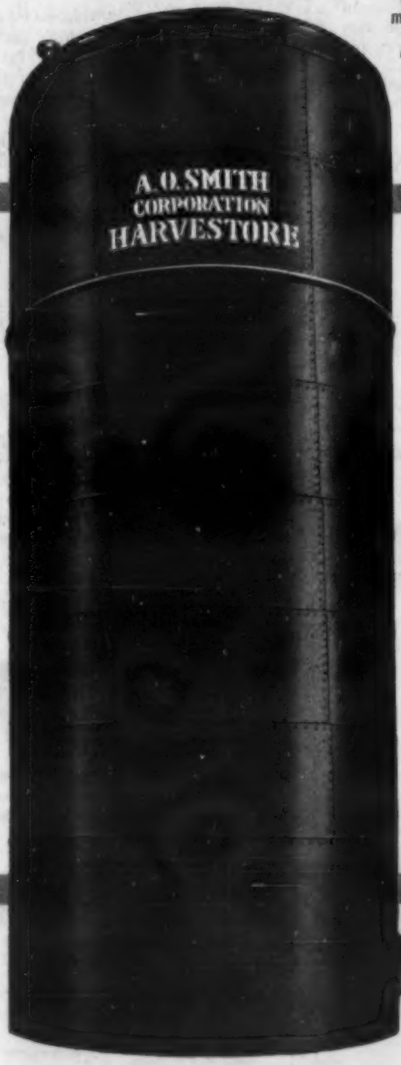
To be entirely realistic, we should always consider an irregular cycle as a warning that something is wrong. Because of this, there is a real need for complete breeding and health records, and close ob-

*Washington Agricultural Experiment Station Bulletin 583.

HARVESTORE

Haylage AND Grain Feeding System.

Millions of Americans have read about the Ringgenberg Family—Gene and Sally and their two children Karen and Kerry. Their story, which appeared in The Saturday Evening Post, told how they had built up their run-down sixty-acre farm near Pierceton, Indiana, into a highly productive 200 acres, with a completely modern mechanized feeding system capable of supporting over 60 milking Holsteins. Hundreds of dairymen have written asking just how they achieved this amazing accomplishment, so here is the story behind their story:



Two 20 x 50 HARVESTORES for storing Haylage. One 17 x 40 for full year's supply of dairy ration.

Gene and Sally Ringgenberg admit that it took long hours and a lot of hard work during their first eleven years building up their dairy farm. But they really have made their greatest advancement since they started their HARVESTORE Haylage Feeding System. Actually it was their HARVESTORES which started them towards the extra profits they were trying so hard to realize on their farm.

Their first HARVESTORE went up on their farm in 1957—intended for corn silage—but 10 acres of Haylage was the first crop to be stored at 50% moisture.

Then came a prolonged rainy period in June, which threatened to turn six acres of windrowed hay into a total loss. They literally saved this hay "between showers" and stored it in their HARVESTORE, too. It turned out to be just as good as the first filling!

When Gene found what a wonderful feed he had in Haylage—another HARVESTORE went up on his farm in 1958. Now he stores three cuttings of alfalfa and Brome Grass—and tops it with corn silage quite late in the Fall when the stalks and leaves are almost completely dry.

Not only did he like the feeding quality of Haylage—this hustling young dairyman appreciated the *time and labor saved* by HARVESTORE'S Automatic Bottom Unloader which delivered his Haylage direct to his Auger Bunk Feeder, extending from his feed control room to his outdoor feed lot.

If his HARVESTORES could save so much time feeding Haylage—why couldn't he save just as much time feeding grain? No sooner said than done! Up went their third HARVESTORE for his *year's supply* of grain ration—stored in the Fall, when prices *are lowest*. Again, delivery is completely mechanized—from his HARVESTORE Bottom Unloader to his overhead feed mangers in his milking parlor.

Through research ... a better way

A.O.Smith CORPORATION

HARVESTORE PRODUCTS
KANKAKEE, ILLINOIS
A. O. Smith International S.A., Milwaukee 1, Wis.

Grain mixtu... parl...

servation of each cow. Most cows will come around all right but some will need treatment.

First-service cows . . .

A practical problem is whether to withhold service when the heat cycle is shorter than 18 days or longer than 25. We were fortunate to be able to study 19,369 services following heat cycles of known lengths.

When the cycle was shorter than two weeks the chances for conception were reduced one-half.

Conception efficiency was somewhat lower when breeding occurred following cycles 26 to 34 days in length, as compared with the 18-to-25 or longer-than-34-day interval groupings.

From our study, there appears no practical reason for withholding service if the cycle is over 16 days in length and the cow is otherwise normal.

We also observed, if cows had two or more cycles less than 16 days in length during the same breeding period, they required 30 per cent more services for conception even though they were bred following a normal cycle.

Because of complete veterinary records, we were able to study cows diagnosed as "reproductively abnormal" and compare these with others not observed as abnormal. This latter group was called "normal," though some may not have been.

Among so-called normal cows repeating for service, in practice, you would be just as well off to skip a breeding when the heat period is less than 16 days or between 26 and 34 after breeding. Though cows in our study were generally not bred when diagnosed "abnormal," these cows required about twice as many services for conception.

Other observations . . .

Much of the data referred to above are from our study of 30 years of breeding records involving the life histories of 2,607 cows. Several other considerations appear to be important in understanding what must be done to improve reproductive efficiency.

Short heat cycles and cystic ovaries are serious disorders but they become doubly so when complicated by an infected or otherwise abnormal reproductive tract.

Retained placenta (10 per cent of all calvings) did not seriously affect reproduction unless other complications developed. This happened about one-half the time. The same thing was true following twinning or abortions.

Reproduction was most seriously interferred with when infection was involved. Along with this was a much higher incidence of faulty ovaries. In combination these disorders presented a formidable problem. The cows which calved again (56 per cent) averaged 638 days between calvings. Those which did not calve again (44 per cent) were treated and serviced almost two years before disposal.

A four-point program . . .

1. Complete health and breeding records.
2. Disease control.
3. Artificial insemination.
4. Routine examinations.

Few of us are lucky forever. One of the greatest difficulties is that we know very little about the primary causes of many types of reproductive failure.

For example, does infection develop because improper ovary function makes the reproductive organs more susceptible to bacterial invasion?

Or is the opposite case?

Does this chain of events lead to death of the embryo more frequently than if such disorders had never occurred? Some recent research strongly indicates these things are true.

How important is faulty heredity in ovary failure? In embryonic death? In failure to fertilize? Here, again, much remains to be learned. Some evidence makes us believe this cannot be overlooked. On the other hand, we do not believe this to be a general problem, though in individual herds it may be.

Why have breeding records?

Records often pinpoint the problems when they occur. Without them, you cannot take maximum advantage of proven management practices. Without them, your veterinarian loses precious time in diagnosis. Without them, you do not really know your cows, nor can you be sure you are following sound breeding management practices.

Why disease control?

Specific diseases, such as Bang's, trichomoniasis, vibriosis, and so forth, can be associated with a particular type of bacteria, and definite control or eradication programs can be used.

Probably much more serious are the unknown numbers and types of infective or irritating agents (nonspecific diseases) which cause vaginitis, cervicitis, metritis, cloudy mucus, and so forth.

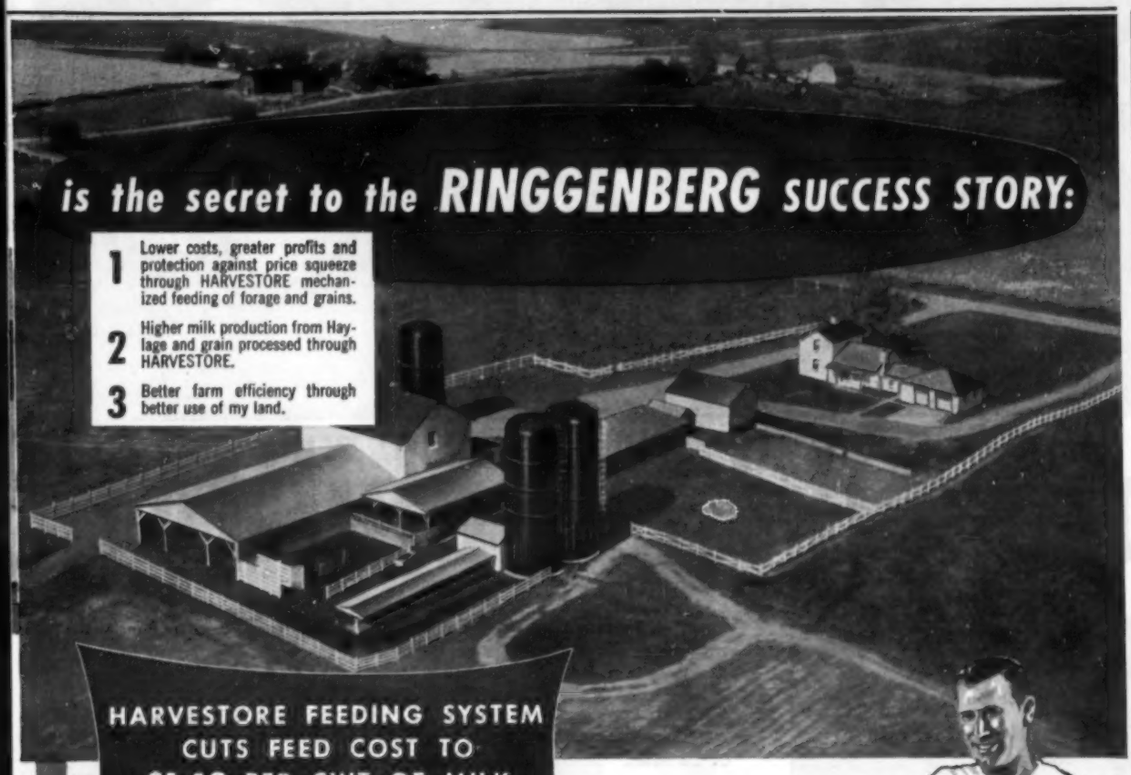
Overcrowding of dairy cows, heifers, and calves is a common and, in many cases, necessary evil of an economical operation. This not only increases the numbers of undesirable bacteria likely to be present but greatly increases the chances of their spreading.

Two of the most critical periods from a reproductive health standpoint are:

1. At breeding—most surely controlled by insemination, using strict sanitary procedures.

2. At calving time—we haven't even made a start on sanitary control at this time. Most of you know the precautions around a hospital maternity ward. By the

(Continued on page 527)


is the secret to the RINGGENBERG SUCCESS STORY:
1 Lower costs, greater profits and protection against price squeeze through HARVESTORE mechanized feeding of forage and grains.
2 Higher milk production from Haylage and grain processed through HARVESTORE.
3 Better farm efficiency through better use of my land.

HARVESTORE FEEDING SYSTEM CUTS FEED COST TO **$1.43** PER CWT OF MILK

Ringgenberg's HARVESTORE Feeding System brought his *feed cost down to $1.43 per hundredweight of milk.* This included his home grown forage, stored in his two 20 x 50 foot HARVESTORES, and the grains he purchased to fill his 17 x 40 foot HARVESTORE!

Then came PROOF of the value of Haylage! His cattle ate more than he expected—so he ran out of Haylage for a couple of months and had to go back to feeding baled hay and silage. What happened? His milk production dropped to the lowest of the year and his feed cost shot up to $2.11—the HIGHEST of the year—an INCREASE of 68c per hundredweight of milk!

Here's what this difference of 68c per CWT between Gene's HARVESTORE Feeding System and the conventional baled hay and silage program amounts to on a year-around basis:

A Net Feed Saving of 68c per CWT of milk on 10,000 lbs. of milk per year from a HARVESTORE fed cow equals an *extra annual earning* per cow of..... **$68.00**

On a 50-cow herd this amounts to an *extra annual HARVESTORE saving of* **$3,400.00**

"MY HARVESTORES ARE MORE THAN STRUCTURAL— THEY'RE FUNCTIONAL..."

"I consider my HARVESTORES more than storage structures for processing better feed. The way I look at them—they are a complete Feeding System. Believe me, my entire family appreciates the labor they save in feeding. I would never go back to baled hay.

"I ran out of Haylage for a couple of months, and I'm not going to let that happen any more. I had to go back on baled hay and silage again. My milk production dropped and my cost per hundred shot up to $2.11, just like before we had our HARVESTORES.

"We consider our HARVESTORE Feeding System the only modern way of farming. My family enjoys it as a way of living—giving us more freedom for home and church activities, 4-H and school work.

"My HARVESTORES are paying for themselves two ways: materially, in greater profit—and spiritually, in better living."—*Gene Ringgenberg.*

delivered to milking automatically

Haylage delivered to auger bunk feeder in feed lot

You, too, can increase your profits with HARVESTORE! WRITE TODAY!

A. O. SMITH CORPORATION, Harvestore Products
Dept. HD-50, Kankakee, Illinois

Please send me complete report on Gene Ringgenberg's Saturday Evening Post success story. ☐

Send me bulletin on Sam Koch's dairy costs and profits—before and after HARVESTORE ☐

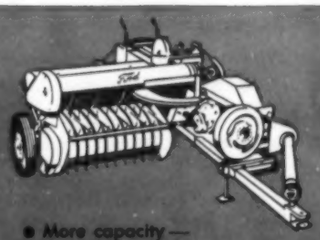
Name..... RR.....

Town..... County..... State.....

FORD 250 HAY BALER

Bales up to 10 tons an hour!

Farm proved "bale-ability!"



- More capacity — up to 10 tons per hour.
- Friction safety clutch in the main drive—shear pin in sweep fork drive.
- Skid shoes to protect pick up.
- Hay hold-down for even feeding.
- Dependable knotter.
- Over-running clutch in PTO drive.
- Individual pick up teeth.
- Sure-action sweep fork feed.
- PTO or 17 h.p. engine models.

Shift to any speed on the go... up or down! Ford Select-O-Speed, greatest helper in the hay field! Change ground speed to meet varying crop conditions with a simple "twist of the wrist"— no stopping — and all the time maintain proper PTO speed. Mow cleaner — rake better windrows — produce straight, well-packed bales. Select-O-Speed has independent PTO plus 6 ground speeds of 4 m.p.h. or less. Best PTO advantage yet for hay tools!

Barn-filling capacity to meet hurried haying season demands. Up to 7 bales per minute means extra loads that save hay crops... makes local custom work profitable.

Ask an owner how a Ford 250 performs... typical replies: "Over 20,000 bales without repairs." "Baled all summer — missed tying only 15 or 20 bales." "More than 2,000 bales without a miss."

Gentle handling reduces leaf loss — From the easy touch of the wide pick up to stay-tied knots of Ford's straight bales, hay is handled gently to save more leaves and feed value. Sweep fork feed helps deliver hay to the chamber with gentle, capacity-boosting action that accounts for more bales. But there's more...

Tie 'em as you like 'em — Choose a twine or wire tie model. Either way, Ford Bales stay tied... exclusive Ford twine knotters are equipped with stainless steel bill hooks for extra long life! Ford wire twisters have fewer moving parts to wear or adjust.

Here's more reasons why the Ford 250 baler became so popular: Fewer parts to wear... fewer adjustments... many sealed-for-life bearings. Flywheel slip clutch protects this baler, permits faster continuous baling. Free floating, power driven pick up for uniform feeding in heavy or light windrows. Carries enough twine for up to 1000 bales.

Priced for low baling cost — Built to high quality standards... used on thousands of farms. PTO or 17 h.p. engine models. Ask your dealer about Pay-As-You-Farm credit plans with up to 4 crop years to pay... as little as ⅓ down. Try a Ford 250 on your farm, soon!

SEE YOUR NEARBY FORD TRACTOR AND IMPLEMENT DEALER

Ford 150 hay baler—The answer to a real need...a new practical size baler for smaller hay crops. Low in cost, yet rugged in design—includes many of the farm proved features found in other Ford balers. Plenty of capacity for hurried "beat-the-weather" baling. Bales up to 8 tons of hay per hour! And it's compact—perfect for sharp turns in tight places.

Ford rear mounted mower—Fast haying pays. Get a good start with a Ford. The 8-foot model will mow nearly 6 acres per hour. There are 6- and 7-foot models available, too! All are designed for narrow or wide tractor wheel spacings. They're full adjustable, have high lift...also safety releases. You'll like the easy 3-point hitch, smooth V-belt drive.

New Ford hay conditioner—Expect to bale a day earlier ...count on cutting the curing time 50%! Two steel, channeled rolls crimp and double crimp—they don't crush. Hay is fluffier with more stems exposed to cure with leaves attached. Adjusts to 1½-inch ground clearance. Rolls release fast for safety. Models to semimount with Ford mower or full trailing to fit any PTO tractor drawbar.

Ford mounted side delivery rake—Handy pick-up-and-go rake for faster haying! This one "rides" to the field fast ...can be quickly raised over obstructions to prevent damage when raking...can be backed into tight spots without jack-knifing. Eight-foot raking width allows 4 acres per hour capacity. And you save more leaves with less hay movement from swath to windrow.

PLOWING UNDER LEGUMES will prove to be valuable on compact soils that need more organic matter.

COMMERCIAL fertilizer is the cheapest source of nitrogen on a loose soil high in organic matter.

Green manure vs. commercial fertilizers

Studies show nitrogen in green manure to be 16 to 46 per cent as efficient on a pound-for-pound basis for increasing corn yields.

by Fred C. Stickler

HOW does nitrogen contained in legumes compare with fertilizer nitrogen for increasing corn yields? Iowa tests showed that for first-year corn, green manure nitrogen was equivalent to 17 pounds per acre of fertilizer nitrogen in a dry year and 50 pounds of fertilizer nitrogen in a normal year.

Remember, we are concerned with the total nitrogen contained in these green manures and not the nitrogen actually fixed by symbiotic bacteria in the nodules on the legume roots.

If we knew exactly how much nitrogen was fixed, our efficiency figures would be somewhat higher. Probably one-third to one-half of the nitrogen contained in these legumes comes from the soil and the remainder from bacterial fixation of nitrogen in the air.

Residual, or carry-over nitrogen, from legume green manures compared more favorably with residual fertilizer nitrogen as indicated by second-year corn yields. The average green manure resulted in a residual yield response equivalent to that produced by 64 pounds of residual fertilizer nitrogen. The legume nitrogen was 73 per cent as efficient as fertilizer nitrogen for increasing second-year corn yields where no nitrogen was applied beyond the first-year corn crop.

These results indicate that legume green manures are a less efficient source of nitrogen for corn than is nitrogen from a fertilizer bag. Thus, they must be considered as an expensive nitrogen source for corn production on level, productive soils where erosion is not a problem.

Green manures are also expensive considering the fact that legumes are seeded and grown with a low-profit oats crop.

Then just what place do legume green manures have in corn belt agriculture today? (Remember, we're talking about legume green manure and not legumes used for hay or pasture.)

First, they have a place in the rotation for the grain farmer with rolling land, where erosion is a problem and continuous row cropping is not feasible.

Government acreage controls may be an important factor in determining the use of legume green manure. Certainly, no oats seeding should be planted without a legume or grass-legume seeding.

Some livestock farmers have difficulty in utilizing all the hay produced. Legume green manures offer a solution to their problem.

Another use of green manures involves a temporary shift in farming operations.

With these special uses in mind, just what legume or mixture should be used? Although biennial sweet clover was our best bet, this legume has two important limitations.

First, there is the possibility of sweet clover weevil damage.

Secondly, sweet clover yields (either in the fall of the seeding year or spring of the second year) are reduced by stubble clipping following harvest of the companion crop which usually is needed for good weed control. Thus, it appears that a mixture would be better than "putting all our eggs in one basket." The exact mixture to seed would vary, of course, with soil and climatic variation throughout the corn belt.

For areas where moisture often is a limiting factor, the following mixture is suggested: 5 pounds biennial sweet clover per acre, 4 pounds Southern alfalfa, and 3 pounds of medium red clover.

For areas where soil moisture supplies are more favorable, a mixture of biennial sweet clover at 4 pounds; Southern alfalfa, 3 pounds; medium red clover, 3 pounds; and ½ to 1 pound per acre of Ladino clover is suggested.

Success in the growth of a good crop of legume green manures is dependent upon ample quantities of available phosphorus, potassium, and calcium (lime).

The author is an assistant professor of agronomy at Kansas State College, formerly a research assistant in agronomy at Iowa State College.

DIFFERENT STRAINS of white clover growing near Raleigh, N.C. in early June. In immediate foreground, certified Oregon Ladino (left) and Louisiana white (right) show typical contrast in amount of bloom and vigor of stand.

Ladino clover has moved in

It has become popular in the upper South because of its heat and drought tolerance.

by D. S. Chamblee and W. W. Woodhouse, Jr.

SOME years ago, Ladino clover began to replace other types of white clover in much of the upper South. In considerable areas of this region it is now our predominant pasture legume.

It continues to produce throughout the summer whenever moisture is available. Most of the other white clovers are lacking in heat and drought tolerance to the point that they revive slowly following drought and often go out entirely during the summer period. Since Ladino makes a quick comeback, it is much more productive and dependable for us.

The authors are professors of soils at North Carolina State College.

During this same period the Louisiana type white clovers have come into wide use in the deep South. New strains such as Alalu, Louisiana Improved, and Louisiana Synthetic No. 1 have become popular while Ladino has made little headway. Again there are reasons.

As we move from the upper to the deep South, clovers are subjected to longer periods of drought and heat stress. Throughout most of this region all white clovers, including Ladino, die back severely during the summer and must depend heavily on seed to come back in the fall.

The Louisiana types seed profusely and volunteer readily and, consequently, are well adapted to this situation. Ladino makes very few seeds this far south, due to the short day-length, therefore, becomes essentially a one-year crop. Thus, the folks in the deep South are justified in sticking with their "kind" of clover and we in the upper South have equally good cause to use Ladino.

Like most of our cultivated forages, Ladino is an immigrant, coming from Italy quite awhile ago; in fact, long enough back to allow for the development of quite a few different kinds of this type of white clover. Therefore, it shouldn't be too surprising that we find considerable differences in the way these Ladinos behave. Some have been more productive than others.

Among the many sources of clover seed, all of which can be properly labeled Ladino, there are some that are much better for our purpose than others. How do we go about getting the particular ones we need? At present it isn't easy. Neither is it impossible.

1. We should buy certified seed since the seed of all white clovers looks very much alike.

2. For our area, seed from the irrigated areas on the West Coast has been best.

3. The better sources have been consistently good, so once you find one that suits you, stick to it.

4. Frequently, heavy bloomers are poor forage producers. These strains seem to put too much of their energies into seed production, leaving too little for growing forage. Even the lowest seed producers make enough seed to volunteer after that bad season we get once every six or seven years.

5. Seed producers are showing increased interest in our problem. It may become easier to get the "right Ladino" before too long.

The following table shows the yield of Ladino and Louisiana white clovers in pounds the first year after seeding (grown at Plymouth, N. C., with orchard grass):

	To June 14	July 13-October 29	Total
Certified			
Oregon Ladino	3,362	2,833	6,195
Louisiana white	3,360	1,255	4,615

This test shows the typical pattern for the two strains—equally vigorous growth in the spring, with Ladino recovering satisfactorily following a June drought, but Louisiana white coming back very slowly and making little summer and fall growth. In drier summers, Louisiana white often goes out completely.

The yields of white clover varieties (best yielding strain in each test rated as 100 per cent) are shown in the following table:

	Per cent
2 best Oregon Ladino	100
Av. of all Oregon Ladino (7 lots - 6 tests)	92 65 - 100
2 best Calif. Ladino	93.5
Av. of all Calif. Ladino (6 lots - 6 tests	69 20 - 95
Av. of all other white clovers (6 lots - 4 tests*)	37 19 - 54

* includes Alalu, La. Syn. 1, La. Imp., New Zealand and Kersey

In these tests, Oregon sources of Ladino have been most consistent, with some California lots being very good, others poor. In both Ladino and other white clover the very poor lots failed to survive the first summer satisfactorily (accounting for ratings as low as 19 per cent).

DAIRYMEN... a good start is 90% of the battle

PLACE YOUR CALVES ON AN A.B.C. FEEN-O PROGRAM NOW

- Your milk production will be increased.
- Your Butter Fat content will be increased.
- Your worm-free calves will become better milk-producing cows and better breeders.
- ABC Phenothiazine products are continuously tested at our experimental farm to assure MAXIMUM WORMING ACTION.

PURITY AND QUALITY GUARANTEED BY THE WORLD'S LARGEST AND FOREMOST PRODUCER OF THE ONLY COMPLETE LINE OF PHENOTHIAZINE PRODUCTS INCLUDING PURIFIED-NF-DRENCH AND FLAVOR-FEEN.

Insist on A. B. C. Finely-Micronized Phenothiazine

SEND TO-DAY! FOR YOUR FREE BOOKLETS

MAIL TO: Atomic Basic Chemicals Corp.
360 Regis Road, Pittsburgh 36, Pa.

_____COPIES OF "The Use of Phenothiazine with Dairy Cattle"
_____COPIES OF "The Use of Phenothiazine with Beef Cattle"
_____COPIES OF "FEEN-O-FACTS"

NAME _____
ADDRESS _____
CITY _____

ABC
ATOMIC BASIC CHEMICALS CORP.
TECHNICAL SERVICE DEPT.
360 REGIS ROAD
PITTSBURGH 36, PENNSYLVANIA

When should a cow be bred?

(Continued from page 523)

same token, putting a cow in a clean stall is a good start. Instead, how often is the same cow allowed to run with the herd a few days afterward, frequently sloughing from weeks to months afterwards? Nearly always.

Obviously, segregation of every fresh cow is impractical. The most practical approach is prevention in the first place.

Why artificial insemination?

We are not advocating commercial artificial insemination for everybody. Some want to control their own herd development programs. Those wishing to do this can also do their own semen collecting and inseminating. So few bulls are needed to breed the nation's cows that we can discard those not producing clean, healthy, highly-fertile semen. Likewise, we can discard those transmitting undesirable genetic factors when they are discovered.

The sooner we are dealing, as a nation, with bulls that have never touched a cow the safer we will be from a reproductive health standpoint. If you wish, you can now essentially eliminate the bull as a source of reproductive failure.

Why routine examinations?

Pregnancy examinations can be accurately done in most cows by 40 days after breeding. By this time, around 28 per cent of the cows which are going to repeat for service have not done so. If you have a conception rate of 60 per cent or a 60-to-90-day first-service nonreturn rate of 70 per cent, this will involve 11 per cent of your cows. Under average conditions, 8 per cent of these can be conceived in a reasonable period of time.

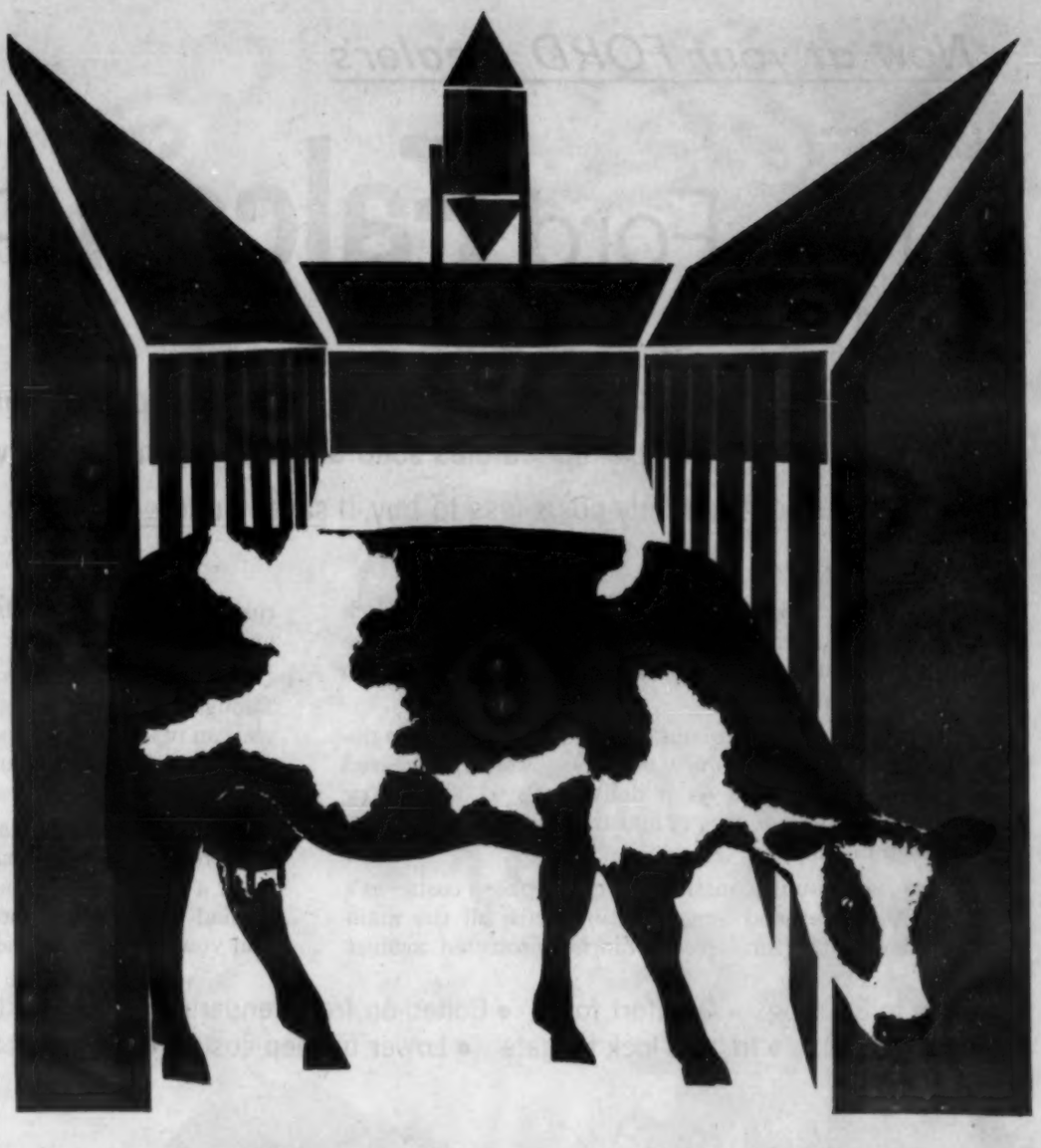
It costs around $100 to lose a cow one year sooner than necessary and replace her with an untried heifer. One-third of the time the heifer is a poor producer.

If your veterinarian routinely came once a month he could:

1. Examine cows for pregnancy.
2. Examine cows which have been fresh for 30 to 60 days.
3. Become well-acquainted with your cows and your herd health.
4. Give advice on how to improve your powers of observation and your records.
5. Both you and your veterinarian would be learning more about this complicated mechanism of reproduction.
6. When unusual circumstances occur, the research man will have good records to work with.

The herd you save may be your own! **THE END**

"Don't try to change the subject."



Want to milk more cows and do less work?

It's true, you can run a larger herd, yet save time and money with the new "LOOSE HOUSING" system of dairy cattle management. This new free booklet gives you the complete time-and money-saving story. It also shows you layouts of the various parts of a loose housing set-up using pole-type structures of pressure-creosoted wood with roofing and siding of galvanized steel.

Pressure-treatment with creosote gives 3 to 6 times the life of untreated wood, prevents decay and rot. Termites won't eat pressure-creosoted wood, fungi won't attack it. In many cases, pressure-creosoted wooden fences, barns, corrals are still giving good service after 20, 30 and even 40 years. For more information about pole-type structures and pressure-creosoted wood, see your local farm or building supply dealer. He is your source for pressure-creosoted wood and galvanized steel roofing and siding . . . plus helpful construction suggestions. U. S. Steel does not treat wood, but is a major supplier of creosote to wood preservers.

USS Creosote
TRADEMARK

Agricultural Section
United States Steel Corporation
Room 2321
525 William Penn Place
Pittsburgh 30, Pa.

Gentlemen:

Please send me your free booklet—"Loose Housing."

Name_____

Street or R. D. _____

Town_____ County_____ State_____

Now at your FORD Dealer's

New Ford **Falcon** Ranchero.

Another first from Ford- a truck that gives up to 30 miles per gallon!
Ford's new Falcon pickup features solid single-unit construction with big 6-foot box.
And it not only costs less to buy, it saves hundreds on gas and upkeep!

One look . . . and you know here's a truck like no truck you've ever known! Another look—this time at the price tag—and you know why no other truck even begins to match its savings!

Fact is, everything about the Falcon Ranchero is designed to cut costs. Its new 90-horsepower Six is geared to move a real load, yet it delivers up to 30 country miles on a gallon of gas . . . and travels up to 4000 miles between oil changes!

New, single-unit construction cuts upkeep costs—it's tighter, quieter and longer lasting, with all the main underbody structural pieces Zinclad-protected against rust and corrosion. Replaceable front fenders (they bolt on) cost less than $30!

The Falcon Ranchero is a great work saver, too. Though the box is a big 6-footer (8 with tailgate flat), you can reach in to *any* part of the load from the ground. And the tailgate opens or closes with a single one-hand motion, locks automatically!

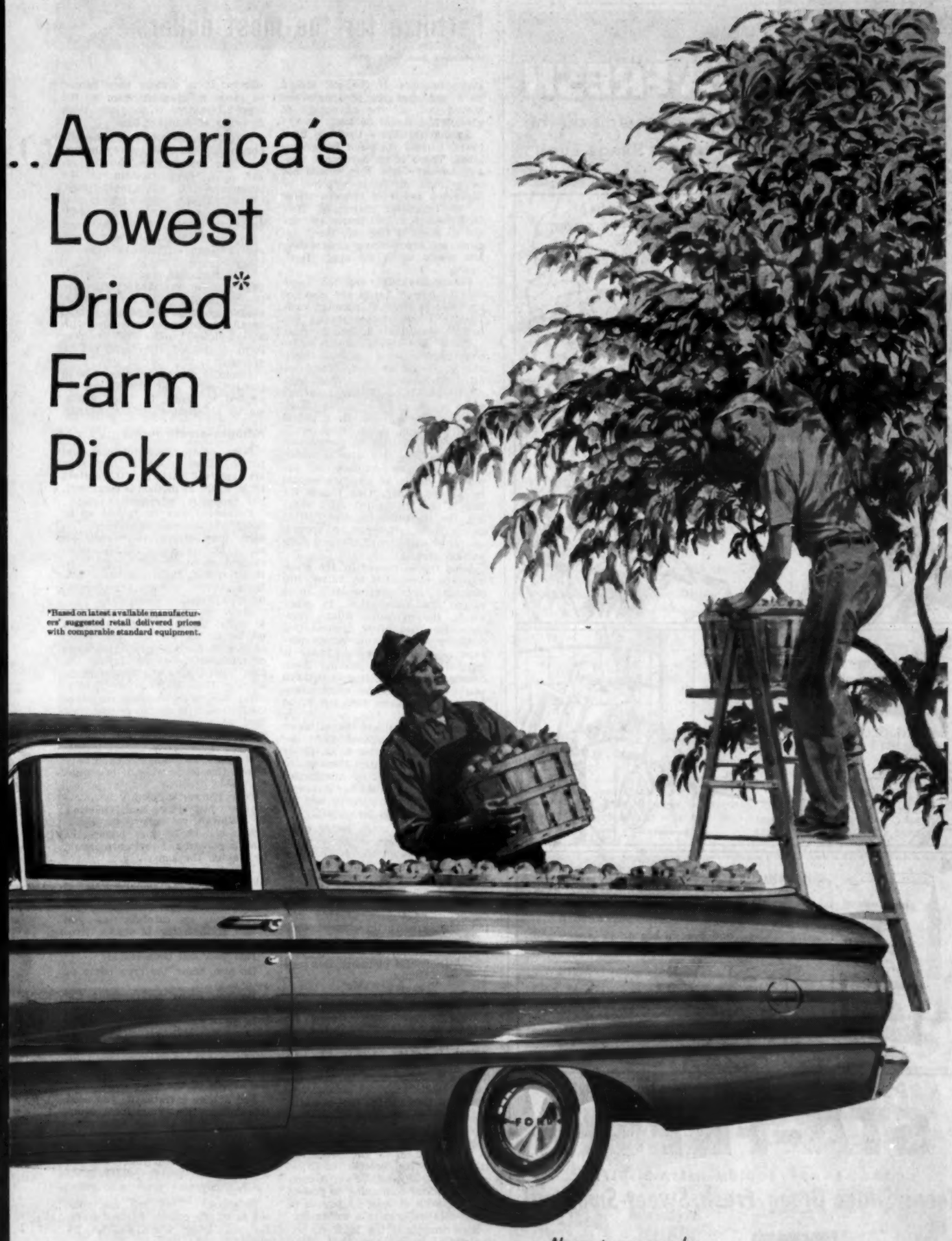
Finally, there's the Ranchero bonus: smarter styling, smoother riding and easier handling than you'll find in many a new passenger car! Call your Ford Dealer—he'll be glad to bring a Ranchero out for a demonstration. And you'll be glad he did!

• Up to 30 mpg • Comfort for 3 • Bolted-on front fenders • Diamond Lustre finish • Single-unit construction • Instant-lock tailgate • Lower upkeep costs • Big 6-foot box • Low loading height

Low and compact, there's not an ounce of fat on the Falcon Ranchero. Yet in its spacious cab is room for three in stretch-out comfort. And would you ever guess that such a sweet-lined beauty is actually the lowest priced pickup you can buy!

..America's Lowest Priced* Farm Pickup

*Based on latest available manufacturers' suggested retail delivered prices with comparable standard equipment.



Newest reason why

FORD TRUCKS COST LESS

STAN STA-FRESH
says: "Sta-Fresh gives you the Richest, Greenest Silage Ever!"
1
"Dairy and beef cattle really go for it! STA-FRESH treated silage is fresher, greener . . . extra high in carotene, sugar, digestible dry matter and total digestible nutrients. Cattle just naturally prefer it—eat up to four times more than untreated silage!"
2
"Wives love STA-FRESH, too, because it makes grass silage smell almost as sweet as new mown hay. STA-FRESH ends "silage stink" forever—no more offensive odors to contaminate milk and cling to your hair and clothes."
3
"And nothing could be easier to use. Special new free-flowing crystal form is easily applied at the blower or field chopper. Works equally well in upright, trench and bunker silos. Good results, too, on a variety of grass and legume forage crops in all parts of the country."
4
GENERAL CHEMICAL
STA-FRESH
Silage Grade
SODIUM BISULFITE
"Talk about being economical! An 80-lb. bag of STA-FRESH treats 10 tons of grass silage. So don't wait any longer to start using it. STA-FRESH pays for itself over and over in big gains in milk and beef. Losses from silage spoilage are reduced to a minimum, too, so that's even more savings!"

Order today from your dealer while he has a supply!

STA-FRESH®

SILAGE-GRADE SODIUM META-BISULFITE

Keeps Silage Green, Fresh, Sweet-Smelling!

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N.Y.

Fertilize for the most dollars

(Continued from page 514)

large amounts. If the soil should be mixed after the phosphate has moved out, all the advantage of granulation would be lost.

Soluble fertilizers that are hard to be banded need not be granulated. There is no agronomic reason, however, why they should not be granulated. Yields will not be depressed and most farmers prefer to use granular materials. They feed through a drill better and are not so dusty if they are being applied on windy days (most days are windy when we apply fertilizer.)

Phosphates that are too insoluble to put in bands are also too insoluble to apply in granular form. They will not contact enough soil to be broken down in time for crop.

There is a serious disadvantage here because most of these insoluble materials in powder form are difficult to broadcast. They blow readily and do not feed well through some types of distributors. They are much nicer to handle if put in granular form. Again, this should not be, if less than 40 per cent of the phosphorus is soluble in water.

All phosphate fertilizers not applied in bands at planting should be plowed under. One reason for this is that if applied after plowing, the operation requires driving heavy trucks or tractors and spreaders on plowed ground. Serious compaction results.

Deep tracks caused by the truck must be eliminated by tillage implements, necessitating still more tillage and compaction. In other words, the minimum tillage principle does not allow broadcasting fertilizer after plowing except perhaps as a side dressing. There is another reason for plowing down broadcast fertilizer. It gets it down where there may be more moisture, if the seasons turn out to be droughty.

Soluble phosphate fertilizers should never be plowed down unless they are granulated. An effort should be made to turn them under immediately after they are spread or at least before rain has a chance to disperse the phosphorus and allow contact with a lot of soil.

We have had much better pick-up of plowed-down fertilizer when we used minimum tillage. In other words, plant roots can reach out under the furrows and gather in the fertilizer nutrients, if the soil is not packed. This means broadcasting the fertilizer, plowing, and planting in as little elapsed time as possible. If it can be done during the same day, so much the better. With careful planning, this may well be possible.

Use starter phosphate . . .

Rate of phosphorus intake increases as concentration in the soil around the root increases. This is why it is better to have zones of high concentration, as in bands or around granules than to have the same total amounts completely scattered through the root zone.

In other words, almost regardless of soil test or amount of fertilizer plowed under, a starter application in bands close to the seed will stimulate early growth of most crop plants, especially corn. A complete fertilizer containing 30 pounds of P_2O_5, with at least 15 pounds in water-soluble form is a minimum.

Experiments at the Michigan experiment station show that liquid fertilizers containing phosphorus should be applied exactly in the same manner as soluble solid fertilizers. It is evident they cannot be made in granular form so the only alternative is to place them in bands at planting time.

It is believed the lesser benefit obtained when they were sprayed over the soil surface was the result of greater fixation of the phosphorus into unavailable forms. Certainly every opportunity for chemical reaction occurs when phosphorus in solution is sprayed over so much surface. Many new planters are equipped for band application of liquids.

This discussion points to the fact that most of the reasons for care in applying fertilizers involve phosphorus. Soluble phosphates should be all banded or partly banded with some plowed under in granular form. If banded, they need not be granular.

Insoluble phosphates should be in powder form and should not be applied in bands. In other words, starter phosphates should be soluble.

Nitrogen-potash timing . . .

Now, what about nitrogen and potash? Does it matter how they are applied? Actually it matters little, so far as method is concerned, but timing is important.

Potassium may be picked up in luxurious amounts when levels are high. Thus, it may be wasted. Also, it leaches quite readily, especially from sands and organic soils. It seems best then to apply potash for each crop and not try to build up high levels in the soil.

Most reasonably good agricultural soils furnish all the nitrogen needed during the first few weeks of growth. Corn seldom shows signs of nitrogen deficiency during the first month. Nitrogen fertilizers are soluble. They leach rather readily. Also, soil microbes consume large quantities. It is not surprising then that corn uses it most efficiently when it is applied at the time of greatest need. Experiments in several states, including Michigan, have shown this to be when it is applied as a side dressing.

Nitrogen can efficiently be plowed down just before corn is planted. In Michigan, we believe the application should be just before the land is plowed and that corn should be planted the same day.

If you are farming 320 acres of tillable land, you probably are spending $3,000 to $5,000 each year for fertilizer. Are you considering the investment as carefully as you would if investing in stocks, livestock, or a new car?

Has your soil been tested?

Do you know the type name of your soil?

Do you know how soluble the phosphorus is?

Is your planter placing the fertilizer properly?

Are you applying nitrogen and potash at the best time with respect to the needs of the crop and the nature of the soil?

For a wise investment, you need this information. Your local county agent, farm advisor, your vocational agriculture instructor, or U.S. Soil Conservation Service representative can help you. Give him a call. **THE END**

Neighbor: "They tell me your son is on the college football team. Do you know what position he plays?"

Proud mother: "I'm not sure, but I think he is one of the drawbacks."

HANDY HINTS

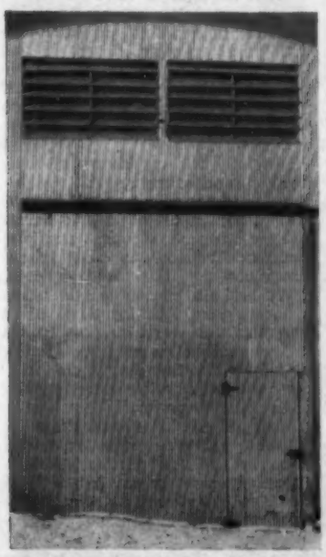
ROLLS BALES

Last summer we had quite a lot of wet weather during hay harvest. To speed drying bales that had been in the rain, I rolled them over with the device shown.

It is an old wagon tongue bolted to the drawbar of my tractor. The swinging bar has enough up and down play to get small and large bales without breaking the tongue over the larger bales.

Kansas THEODORE J. POLLARI

INSTALL LARGE LOUVERS



A large louver in each end of a building used for loose housing of livestock will do much to reduce frost formation on the underside of the roof in cold weather, regardless of open doors.

Place louvers as high as possible. Make them at least 4 feet wide and 2 to 3 feet high. Do not cover the inside with window screen as this will greatly reduce air movement through the louvers. If you want them "bird tight" use large mesh hardware cloth.

Minnesota D. W. BATES

MAKING HOLES IN GLASS

It isn't too difficult to make just the size hole you want in a pane of glass.

Build a circular dam of putty with the diameter you wish the hole to have. Set a rod on end against the glass and pinch the putty in place around it.

Melt a small quantity of lead and pour this into the depression. A round piece of glass will fall out leaving a hole the desired size.

Iowa HAROLD NEWBERG

SPRAYING AND MOWING

When spraying the hay crop for insect control, drive your spray rig in the opposite direction to which the mower will be driven at haying time. Any "down hay" from the tractor and spray rig will be leaning in the direction of the mower rather than away from it. Mowing will be a lot easier, and you will do a much cleaner job.

Pennsylvania CHARLES MARTIN

ELECTRIC CABLE REEL

Cecil Browning, farmer in Waukesha County, Wis., has made a very handy electric cable reel. This reel is made out of a cable spool (which he picked up in a store) and a through-bolt to which he fastened a handle. The outlet box is arranged so it is always in position to plug in a piece of equipment. He also has a larger one of these, made on a hose reel.

Wisconsin RALPH BOWEN

CLEANS BARN BROOMS

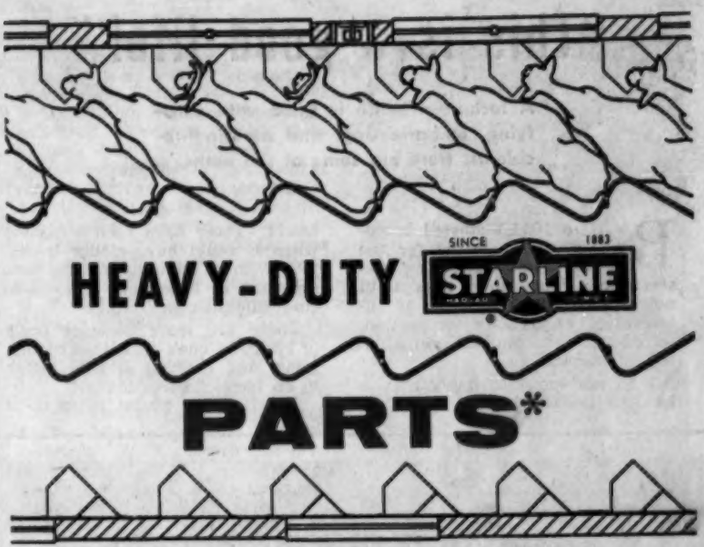
To keep barn brooms in good condition, soak the bristles in a detergent solution occasionally. This bath loosens dirt that clings to bristle ends and makes broom easier to use. This works equally well for brooms used in the garage or basement.

Minnesota MRS. LOUIS GABLER

FOLDING LADDER

There is no problem climbing into an upstairs shaving storage room at the Purina Research Farm, Hillsboro County, New Hampshire. Fred Garland, Jr. uses an overhead folding ladder like the one shown. Ladder is balanced and fits into ceiling out of way.

New Hampshire C. L. STRATTON

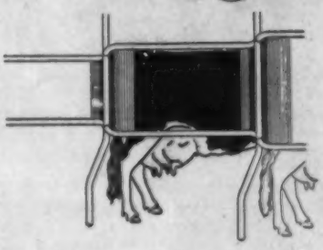


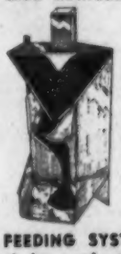
Designed for operator comfort, fast milking, and Grade A sanitation

HERRINGBONE STALLS STARLINE

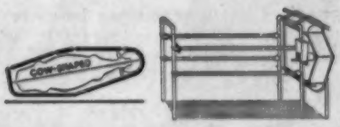
OFFSET LEGS, of 1.66 in O.D. galvanized steel pipe, set into curb or edge of cow platform. Prevent cow stumbling . . . provide unobstructed work space for operator to attach milking equipment.

SPLASH SHIELD — holds cows' hindquarters in position . . . protects operator. Note the cow-high, 3'8" wide inspection area between shields.





METERED FEEDING SYSTEM — pull-type control for each manger lets down an accurate amount of pellets or ground feed from 60 lb. storage bin built into each manger. Controls may be grouped at one end or placed at each stall.



Starline also manufactures side opening **CONTOUR STALLS** and **LANE TYPE STALLS** for dairymen who prefer either of these milking parlor plans.

*IF YOU EVER NEED REPLACEMENT PARTS, STARLINE GIVES YOU THE ASSURANCE OF IMMEDIATE SHIPMENT.

STARLINE, INC.
HARVARD, ILL. • ALBANY, N. Y.
CANNON BALL
Manufacturer of "Lifetime Guaranteed" Cannon Ball Door Track and Trolleys

STARLINE, INC., 316 Front Street, Harvard, Illinois
Please send details on the various Starline Milking Parlor Plans.

NAME
RFD & TOWN
COUNTY STATE
Check for special literature if student ☐

If Your Dealer Does Not Handle Goods Advertised in Hoard's Dairyman — Ask Him Why!

Milk all four quarters at once—stop milk contamination.

QUARTER MILKER COMPANY
809 S. E. Powell
Portland 2, Oregon

LAXOTON

LAXOTON combines the desired qualities of a Stimulating Laxative; giving stomachic action alleviating impaction. LAXOTON in proper doses stimulates the flow of digestive fluids and increases Peristalsis. LAXOTON has been successfully used for over 50 years by dairy farmers all over the United States.

10 oz. can.....$1.38

DR. DAVID ROBERTS VETERINARY CO. INC.
WAUKESHA, WISCONSIN

"This is a good life!"

A technician's life is filled with satisfying, embarrassing, and amusing incidents. Here are some of the author's.

BACK in 1952 I started breeding cows artificially for the Cache Valley Breeding Association. From that time until now I have found it to be an interesting, enjoyable occupation, spiced with the unusual and often the humorous.

I do not mean to imply that it has all been a bed of roses. It hasn't. There have been occasions when I would have gladly traded jobs with a bikini swimming suit salesman in Iceland or a sealskin coat salesman in Haiti.

There are more pleasant ways of spending one's time than roping, tying, and breeding a wild heifer in an Idaho subzero blizzard.

Nor is it the easiest thing, on a very busy day, to remain patient and amicable while helping a farmer bring old Betsy in from the south 40, then waiting while he runs to the house to find her registration papers, then waiting again while he makes another trip after his "personalized" checkbook.

And it doesn't help one's morale a bit to face a glowering dairyman whose herd is plagued with low conception troubles. He can make you feel like a fifth column saboteur bent upon destroying him. Worse yet, he may call in that archrival competitor.

For the most part, however, I have found dairymen are friendly, cooperative folks. In fact, my close association with them, and with others who share an interest in artificial breeding, has been the very best part of my job. I often reflect upon the fact that many of my closest friends might as yet be strangers had I not become an A.I. technician.

Though this work may become exasperating, at times even frustrating, seldom is it monotonous or dull. Even that archrival competitor helps us maintain alertness and interest. Ethical competition keeps us on our toes.

Artificial insemination is still a new and rapidly-expanding industry. A vast amount of research and experimentation is necessary to keep pace with its phenomenal growth. Usually we technicians are the "guinea pigs" who prove the value of new ideas and methods originating in the laboratories. This growth and change gives our work a perpetual newness, a freshness, which dispels boredom and complacency.

ARTIFICIAL BREEDING

by Warland Larson

Spice of life . . .

If variety is the spice of life, we A.I. technicians have our share of the spice. We seldom know in the morning which direction we will go, how many places we will visit, or how many miles we will travel before our day is done. New faces, new places, and new experiences are our lot, and we like it that way.

Officially we are known as artificial inseminators or A.I. technicians, but we soon answer to several other appellations, such as bull cheater, bull man, artificial man, modern cow puncher, green-gloved boy, joy killer, and so forth.

We are also the subject of many a bovine joke. But for those of us who like this work, the pet names and personal jokes hold no offense. In fact, we rather enjoy the prestige and distinction our unusual occupation gives us.

Most of us have our share of unusual experiences, especially when we are new at this business. These experiences may range from the very humorous to the downright embarrassing. One rewarding thing, however, the more embarrassing the situation at the moment, the most spiced with humor it becomes in reminiscing.

Embarrassing moments . . .

I'll not soon forget the first time I bred a cow with a lady present. (I doubted that she was a "lady" at the time.) Her husband, who worked off the farm part time, was not at home. Therefore, she helped put the cow in.

After helping, I thought she would leave, but she didn't. Several embarrassing minutes of idle conversation and waiting convinced me she didn't intend to leave.

So, red-faced, I proceeded to do what must be done, and in those tyro days her presence didn't facilitate the threading of the pipette in the least. Fortunately, for me, while I "sweat it out" she eased the tension by conversing as casually as if she were having a "tit-a-tat" over a cup of tea.

Another occasion I remember well was a call I had at the largest town in my unit. The cow was staked in the back yard of a place in the most populated area.

It was a beautiful spring day.

when infection strikes...
FAST RESULTS WITH
INJECTION
BICILLIN®
FORTIFIED
Benzathine penicillin G and procaine penicillin G, Wyeth
100
Wyeth
A Century of Service
INJECTION BICILLIN FORTIFIED cuts losses caused by serious infections quickly and effectively. It provides fast results with one injection. You save time and money because repeat injections are not necessary.
Against these diseases: pneumonia, calf diphtheria, actinomycosis (lumpy jaw), foot rot, navel ill, shipping fever
Get this dual action: high, immediate penicillin blood levels that promote rapid spread of penicillin through tissue followed by maintenance levels for 5 to 6 days
With these benefits: fight infection fast and help prevent relapses, recurrences, and reinfections
Wyeth Laboratories Philadelphia 1, Pa.
AVAILABLE:
INJECTION BICILLIN FORTIFIED 300, 150,000 units of BICILLIN and 150,000 units of procaine penicillin G per cc., in 10- and 50-cc. vials.
INJECTION BICILLIN FORTIFIED 600, TUBEX®, 300,000 units of BICILLIN and 300,000 units of procaine penicillin G in a 1-cc. TUBEX-sterile needle unit.
INJECTION BICILLIN FORTIFIED (2,400,000 units), 1,200,000 units of BICILLIN and 1,200,000 units of procaine penicillin G in a 4-cc. disposable single-dose syringe.
Protect your future with WYETH products!

School was out and boys and girls of all ages were playing everywhere. Several women were out-of-doors hanging out their wash, gardening, or just gossiping over the back fence. On a busy road and sidewalk nearby, cars and pedestrians were constantly passing. I looked around, but I couldn't see as much as a small bush to hide the cow behind.

Beyond call of duty . . .

What a dilemma! Again I spent several minutes in embarrassing indecision. Wasn't this situation asking an inseminator to go beyond the call of duty? Wouldn't he be justified in passing this cow by or in sneaking back and servicing her after dark?

On the other hand, I argued with myself, hadn't the owner, by his call and fully knowing the conditions, authorized me to service her here? Certainly! Nevertheless, I bred that cow in record time and slunk out of there like a chicken-killing fox.

It doesn't take too long on the job to convince most new technicians that excessive modesty and prudishness are poor attributes for this work. Whether we like it or not, we have an attention-getting, curiosity-inciting occupation.

For the average person, animal reproduction is an interesting though often a mysterious or misunderstood subject. A working knowledge of it is an indispensable requirement for a good technician. I have found the ability to explain it in an interesting, understandable manner not only eases self-consciousness when servicing cows in the presence of others, but it also gives much satisfaction in seeing the interest it develops.

Although "performing" with others present has become an accepted and expected part of this job, occasions still arise which severely tax my composure. For example, when two young ladies boldly ask if I cared if they watched, my composure nearly slipped.

Nor was I exactly as cool as the proverbial cucumber on the hot summer day a lady and her brood were present. It seems my wife had assured her that I didn't mind at all if she watched. Forthwith, the next time I visited her farm, she was right there with several of her children. They lined up on old buckets and milk stools like so many spectators on the front row at a three-ring circus to watch the show.

Many and varied are the audiences I have had. There have been men and women from many walks of life who happened to be on the farm when I arrived. There have been 4-H groups, vo-ag classes, and myriads of young folks.

It is difficult, indeed, to go onto a farm with a kit filled with unusual paraphernalia in one hand and a two-gallon spout can (which I carry) in the other and not arouse considerable curiosity in the "smallfry" living there.

This contact we have with the young folks is, for me, one of the most pleasant features of A.I. work. I believe the technician who handles this contact well is providing a valuable, extra service.

Fortunately, for our young people, we have been rapidly emerging from the "run 'em in the house, pull down the shades" era. I still encounter a few folks who will not allow their children to be around when I service a cow. But most people welcome my visits as an opportunity to explain, or have me explain, a little about the "birds and bees" or, incidentally, the cow.

It is pathetic to see parents who seem to want their children to learn something about reproduction, but seem unable to approach the subject. Often they will tell their children to leave the barn and then, knowingly, allow them to peek through the cracks.

Children treated in this manner remain curious and unsatisfied. And is it any wonder? I find the crack-peekers peeking in year after year. But the young folks who are allowed to come in and learn something of the wonderful story of reproduction are soon satisfied. Once satisfied, a friendly greeting may be all I get from them. They have more important things to do.

A word of caution to the new technician: Sex education is primarily the prerogative and responsibility of the parents, not the technician. Do not usurp this privilege. Most parents will welcome your cooperation and assistance but not your interference. Be tactfully guided by their attitude.

Suggestions . . .

Do not argue politics, religion, or any other controversial subjects with a patron. One of them may cut loose with a diatribe of abuse against a pet peeve which will nearly sweep you out of the barn. Do not agree just to be agreeable; this might "backfire" later. If possible, be noncommittal. If pressed for an opinion, counter with "I haven't sufficient information on that subject," or "I'll have to give it more study," etc.

You may be asked for advice on anything from buying a calf to buying a farm. If you truly feel qualified to give useful, sound information, give it. If not, it is better to give none.

As you gain their friendship, many of your patrons will confide in you. You may be entrusted with information of such an intimate and personal nature that hearing it might be a little startling, at times even shocking. Whatever you do, do not betray such confidence.

You will find real joy in giving helpful, friendly service. Few things are more pleasing than hearing a deserved compliment from one of the people you serve.

When one of your patrons points out an artificial daughter and says, "That is the best milk cow I've ever owned," or says, "My herd average has increased over 100 pounds of butterfat since you talked be into going artificial," then you will find, as I have, that breeding cows artificially is a good life.

THE AUTHOR is an artificial breeding technician working with the Cache Valley Breeding Assn.

Compare the difference in Milking Parlors

Here are just a few of the important and *exclusive* advantages you'll enjoy with a CLAY "cow-a-minute" *Herringbone* Parlor.

- **Heavier, high carbon steel for strength. Stainless steel, welded joints**
- ***Electro*-galvanized (not painted) for protection from rust and corrosion**
- **Better cow fit. Stalls are shaped for cow comfort. No sharp corners to cause bruises**
- **Exclusive non-clogging feed chutes and largest feed pans on the market**
- **Posts have durable, stainless steel sleeves where they enter concrete**
- **Entrance, exit gates operate easily, feature double strength construction**
- **Easier to clean. Few obstructions. Convenient, full-length drain**

Planning to modernize your milking set-up? See your nearby CLAY Dealer . . . or mail the coupon *today!*

CLAY PUSHBUTTON FARMING

Modern Equipment for Easier Farming

Corn and Hay Driers

Barn Cleaners

Milking Parlor Stalls

Silo Unloaders

CLAY EQUIPMENT CORPORATION
502 Olive Street, Cedar Falls, Iowa

Please send free planning booklets on

☐ Cattle Feeder ☐ Milking Parlor ☐ Crop Drier
☐ Barn Cleaner ☐ Silo Unloader ☐ Hog Equipment

Name_____
Address_____
City_____ State_____

DAIRY FARM HOME

Tips for easier cleaning

by Margaret Speers

REMOVE GUM with a non-flammable household dry cleaning fluid. Using clean cloth, apply fluid on and around outside of gum. Then lift gum with dull knife or spatula. Rub area dry with clean cloth.

LET us say it at the beginning: There is nothing miraculous here! When it comes to cleaning **you** still have to do some work. But we hope these tips will lead you to new helps and some simplified methods that will make your cleaning chores easier.

You can save yourself time and energy by doing some planning and organizing before you start cleaning.

• To avoid retracing steps, put everything you'll need for cleaning a particular room into a basket or on a cart. Take it with you to the room and completely clean one room at a time.

• If you live in a two-story house, keep a set of cleaning supplies on each floor.

• When you are cleaning a room, start at the top. Use a soft, lintless cloth over a long-handled dust mop for wiping ceilings and walls. Remove finger spots and soil from walls; then wash or dust ceiling light fixtures and lamps. Do furniture and windows; last of all do the floors.

• Whenever you can, sit when you are cleaning, when dusting books, vacuuming furniture, sorting magazines, toys, and so forth.

• Keep a wastebasket in every room. As you clean, empty the wastebaskets into a large kitchen wastebasket or a big shopping bag, thus saving carrying the baskets back and forth through the house.

• Before you start to clean a room, put objects such as vases, figurines, ash trays, books, and magazines into a basket or on a cart and set in hall until cleaning is complete and they can be put back in place.

• If you can manage it, put your hobby collections, china, and bric-a-brac behind glass doors or in glass display cases. This will eliminate frequent dusting and cleaning.

New helps available . . .

During the last several years, many new ready-to-use liquid cleaners, waxes, and polishes have come on the market. Their purpose is usually two-fold: To make cleaning easier and to help preserve the beauty of your furnishings. Give them a try; you may find several that suit you to a "T."

• For cleaning your upholstered furniture, try one of the new soil-resistant cleaners that deposits protective silica on fibers.

• Upholstery faded? There are now tints that you can sponge on; some of them clean while they restore the color.

• There are all kinds of new carpet shampooers, cleaners, and compounds available. These are to be used in your periodic home-cleaning program, but are not regarded as a substitute for an occasional thorough carpet-cleaning job by professionals. Ask your carpet dealer's help in selecting the do-it-yourself cleaner best suited to your carpeting. There also are available reliable stain-removal kits for use on carpeting and upholstery.

• Now you can buy adhesive-backed felt to put on the bottoms of ash trays, decorative items, bowls, lamps, book ends, and so forth to protect your furniture surfaces.

• Take advantage of some of the modern cleaners available for ovens; they come in spray-on and brush-on varieties. There are special oven liners, too; just throw away when they are soiled and replace with new. Keep your enameled appliances shining like new with one of the liquid appliance waxes; they clean as they polish.

• Get tarnish-proof cloth for lining silver drawers; make the lining long enough so it will cover over the silver, too. Put large silver pieces in plastic bags to retard tarnishing.

Notes on walls and woodwork . . .

• Begin by cleaning and vacuuming furnace and heat registers and radiators first so dust won't recirculate.

• Use enamel paints on walls and woodwork in kitchen, bathrooms, work rooms, and back hall areas where fingermarks and soil are apt to be heavy. Use enamel paints on the woodwork in the children's rooms, too.

• Cover wall behind range with an easy-to-wash material such as tile, plastic-adhesive-backed wall covering or some other washable wall covering.

• When you use wallpaper, make it a point to buy the really washable kind or have the regular wallpaper coated with one of the plastic coating materials now available. These coatings make wallpaper stain resistant and washable.

• Use your vacuum cleaner with a dusting attachment to dust door and window headings, mouldings, draperies, and window sills. Do it frequently so dust and soil do not accumulate.

• Dust Venetian blinds once a week using the vacuum dusting attachment. Dust with slats turned down and then with slats turned up. Wax the blinds to give them a slicker surface so dust won't cling to them so readily.

• Remove finger marks and soil from walls and woodwork with one of the new liquid cleaners—no water, no rinsing, just wipe.

• If washing woodwork is necessary, start washing at the baseboard and work up. When water runs down on soiled surface it will leave streaks which only hard rubbing will remove. Water won't stain woodwork that has been washed. Work small area at a time and overlap strokes. Rinse with clear water. Wipe with a clean drying cloth.

Do the floors last . . .

Prevent soiling whenever you can. Do your best to keep mud, rain, and snow out. On days when weather is a problem, use throw rugs at entrances and put down a rug runner to catch the dirt before it is tracked all over. Another suggestion: Cover carpeted areas with sheets of clean plastic where soil may be heavy.

• If you have a vacuum cleaner with attachments, use the wide brush attachment for sweeping all your hard-surface floors. This is the quickest and most thorough way of removing lint, dust, and dirt particles.

• Invest in a good electric floor polisher. These may seem a little expensive to you at first, but they take most of the back and knee work out of floor care. They usually have two sets of brushes; one set for scrubbing and applying wax and another set for polishing and buffing. Polishers may be used on hardwood floors, tile, and linoleum.

• Have hardwood floors? Then do a little experimenting with waxes called "liquid-polishing waxes." When soil is moderate, these waxes will dry-clean wood while they wax, no water needed. The procedure is this: Dust the floor first. Pour a small pool of wax on the floor and rub with a long-handled applicator to loosen the soil. Where there are stubborn spots and heel marks, use fine steel wool; pick up loosened dirt with a cloth. After rubbing wax over entire floor, buff.

• Invest in a long-handled applicator for applying liquid waxes to floors. The applicator consists of a long handle fitted into a block of wood which holds a soft lamb's wool pad. This pad distributes wax evenly, will remain soft when rinsed thoroughly after use.

• Don't wax too often. Once a month is usually often enough. Otherwise your floor may suffer from "wax buildup" which sometimes makes the floor seem sticky and gives it a discolored appearance. If this is true of your floors now, use a wax remover to remove old wax and restore beauty.

• Before waxing tile and linoleum floors, wash them thoroughly using very warm water and a mild detergent. Remove scuff marks by rubbing gently with fine steel wool. Rinse with clear water. Let dry; then wax. (Use only self-polishing wax on asphalt or vinyl asbestos tile.) Buff.

• Between waxings, damp-wipe soiled areas and buff. If you do not have an electric polisher, buff with a chenille mop or soft cloths "shuffled" under foot. **THE END**

From Day to Day

by Lois J. Hurley

I AM GOING to indulge in what might be labeled "mother talk" for this issue. Do you find yourself, more and more as the years go by, recalling the things your mother used to say that reflect such a different way of life than the one we live?

The other morning, as I piled a collection of tin cans in the trash container, I was thinking what a dim view Mamma used to entertain of neighbors whose back porch or back yard held a barrel full of tin cans in the spring.

"Shiftless," she'd say. "Any woman who doesn't can enough food for her family to live on during the winter and has to run to the store every time she wants a can of tomatoes is shiftless!"

That accusing word confronts me each time I add to my collection. I still can peaches and tomatoes and make my own pickles and jams, but it seems there's still a lot I buy in cans.

I wonder how the homemakers of yesterday would react to step into the homemaker of today's kitchen and take a peek in her cupboard and refrigerator.

Another thing my mother took a dim view of was "baker's bread." If a neighbor woman served it at a Sunday company dinner or to the threshers, Mamma would tut-tut. Until very late years indeed, I can't remember that we ever bought a loaf of bread in my mother's house. She baked "light bread" on Saturday and when that was gone, made corn bread for dinner or supper and biscuits every morning for breakfast.

Nowadays, country women use mixes and baker's trucks and the shopping centers' bread counters as heavily as anybody. Recently, a reader took me to task for recommending the use of angel food and pie crust mixes; she said I was writing against the farm woman who had generous supplies of eggs and lard at hand to make her own cakes and pies.

True, but women don't bake-from-scratch on the farm to a much greater degree, nowadays, than do women in town. I well remember how an editorial group I belong to solemnly assured the food processors several years ago, that farm women would never accept mixes. I also remember how, a couple of years later, food processors brought a set of figures to our convention, showing the distribution of use of their mixes, that made us eat our words.

Food patterns today are very similar in all homes. There are still some women who cling to the old methods, but many have abandoned them in the interests of time and labor saved.

You and your teen-ager . . .

Recently my daughter and I sat together on a parent-teen panel, discussing some of the problems and perplexities that boys and girls of the early teens and their parents experience.

As the discussion progressed, I couldn't help reflecting on my own long-ago teen years and wondering to myself just how my mother would have reacted to an invitation to take part in the sort of program we were conducting.

I don't think she would have accepted; I don't think she would have known what to say, nor have seen the necessity of saying anything. I don't recall that any such conference was ever held by school, church, or any similar agency, in my early day.

I tried to judge which was the better way: Did we need such conferences and did we suffer because of their lack? Do such conferences, which are common today, puff the teen-ager up to a false idea of his importance? Or do they break down the barriers between parent and child and make possible a better communication, which, according to experts, is a prime need?

Exchange of ideas good . . .

To a certain extent, I think letting our teen-agers know we worry about them, as a group, can be unhealthy in that it inflates their ego and gives them a whip-hand over those who have authority over them. On the other hand, I think free and frank exchange of ideas between child and parents is healthy, good, and may ward off bottled-up emotions in both whose eruptions could cause trouble.

Certainly the boy and girl of today does not suffer the repressions that I always felt toward my parents. At least, the non-problem child is a frank and open child on all subjects about which I used to feel uncomfortable to discuss with my mother. To ever have mentioned some of them to my father would have been unthinkable.

For instance, when I started to like boys, I'd have died before I'd have admitted it to my mother. My daughter steams and stews about the boys she likes and we all live up in the clouds or down in the depths with her as each fancy comes and goes.

Slights she suffers are shared by us; I bottled mine up. Honors are openly rejoiced in; I used to disclaim mine.

I don't think there is the whispering about sex between girls that there was in my day. I can remember how quick I was to pass on any new theory I'd heard to my best girl friend and in what fascinated horror we conjectured about it. She returned the favor.

My daughter has been the kind of child who asked few questions and parried my attempts to introduce sex information. So, I have simply started taking it for granted she knows what I am talking about, and I talk freely, as occasion arises.

This brings forth the information as to just how much she does or doesn't know and I matter-of-factly fill in the gaps, on the proposition of "Oh, I supposed you knew about that. Why, that just means . . ." The stigma of mystery or evil seems to disappear by this method.

Of course, I'm not so naive as to think that my teen-ager "tips her hand' to me on all that goes through her mind. Any parent who says "My daughter (or my son) tells me **everything**," just kids himself. And who would want them to? A certain degree of self-containment must develop as a child grows, else he never becomes the emotionally mature individual that adulthood requires.

Letting the child know the ear is there and willing to listen is fine; pressuring same child for his confidences is a pretty sure way of failing to get even the part of them to which you are rightfully entitled.

8192. Here is a charming bare-arm dress for the half-sizer with yoke and pocket interest, plus a crisp bolero for those covered-up moments. Sizes 14½, 16½, 18½, 20½, 22½, 24½, 26½. Bust 35 to 47. Size 18½; bust 39, 4⅝ yards 35-inch; bolero, 1⅝ yards. Price 35 cents.
1471
10-20
1471. Cute little toppers for warm weather to wear with shorts, slacks, or skirts. All three in one pattern. Sizes 10, 12, 14, 16, 18, 20. Bust 31 to 40. Size 12, 32 bust, halter top, 1⅓ yards 35-inch; surplice, 1⅓ yards; tied halter, 2⅛ yards. Price 35 cents.
8192
14½ - 26½
8353. This clever culotte will meet every demand from house cleaning to shopping. Easy to sew, too. Sizes 32, 34, 36, 38, 40, 42, 44. Bust 34 to 46. Size 34, bust 36, 5 yards 39-inch. Price 35 cents.
8353
32-44
8117
12½-26½
8117. A well-fitting classic for the shorter figure, featuring front-buttoning and comfortable yoked back. Sizes 12½, 14½, 16½, 18½, 20½, 22½, 24½, 26½. Bust 33 to 47. Size 14½, 35 bust, 4½ yards 35-inch. Price 35 cents.
1578
36-52
1578. A neat, well-cut frock in larger sizes that you can wear confidently all through the warm months. Add a crisp contrasting collar. Sizes 36, 38, 40, 42, 44, 46, 48, 50, 52. Bust 36 to 54. Size 36, bust 38, 4½ yards 35-inch; ⅝ yard contrast. Price 35 cents.
8194
3-8 yrs.
8194. Pretty princess jumper, blouse, and saucy bonnet complete a summer wardrobe in one pattern, and sew-easy, too. Sizes 3, 4, 5, 6, 7, 8 years. Size 4 years, dress 1⅝ yards 35-inch; jacket, ⅞ yard; bonnet, ½ yard. Price 35 cents.

Pattern Nos.	Size

HOARD'S DAIRYMAN, PATTERN DEPT.
Fort Atkinson, Wis.

NO PATTERNS EXCHANGED

$_____ for patterns, 35 cents each.

NAME _____ RFD _____

CITY _____ STATE _____

Dual-purpose Fox SUPER-6

Fast, dependable harvester

This low-cost, light-running forage harvester has the capacity to breeze through today's high-yield crops. Positive feed into the 6-knife cutting cylinder and a *separate* two-speed blower insure rapid flow of forage from field to wagon. Quick-attach, 1 or 2-row corn, pick-up or mower bar units. Traditional Fox quality for years of trouble-free operation.

Convert any Fox to ear corn grinder for less than $50.00

Grinds wet or dry ear corn and cobs. Up to 14 tons per hour capacity. Blows to 60-foot height. Quickly and easily installed.

Send for FREE catalogs on SUPER-6 and heavy-duty CUSTOM-7 pull-type, new SP-F self-propelled harvester, forage boxes and blowers.

FOX RIVER TRACTOR CO.
Dept. 28-50 Box 469, Appleton, Wisconsin

MAKE YOUR FORTUNE

Sell famous Spring-Step Cushion Shoes for all the family—men, women, children and babies! Earn big money daily plus Cash Bonus and Retirement Income with amazing 2-minute demonstration that sells on sight. Big repeat business. Full or spare time. America's Biggest Selection of Shoes for all the family. Free outfit given. No investment ever. Write today.

ORTHO-VENT SHOE CO., Inc.
7305 Brand Road, Salem, Va.

BROWER Whirlwind FEED MIXER

SAVES $10-$16 A TON ON FEED!

Write for FREE CATALOG

BROWER MFG. CO., Box 2504, Quincy, Illinois

DON'T SETTLE FOR LESS . . . THAN A

PATZ, AMERICA'S NO. 1 BARN CLEANER

No. 1 in Strength and Flexibility
The specially-designed Patz Barn Cleaner chain actually rests at the point of greatest stress. The drive sprocket pushes each link on its way—to eliminate the link bending pull of excess loads around corners and through the drive sprocket. There are no pins to rust, bend, bind, stretch or break—yet, it's a flexible chain with a smooth rolling action that makes 90 degree left or right hand turns—45 degree elevations.

No. 1 in Ease of Installation
Individual links can be added or removed in seconds without the use of tools! Factory Fabricated Corner Posts are precision built, install accurately and fast. Flites are welded to individual links and installed with the chain. Power unit, reducer, elevator and steel adjustable stand are all built to provide a clean, fast, simple installation.

No. 1 in Years of Trouble-Free Service
The Patz Co. is the originator of circular, Pitless Barn Cleaners. Today, many of the original installations are still providing satisfactory trouble-free service. So why settle for less than a Patz—America's No. 1 Barn Cleaner. Get all the Patz Facts First. You'll be glad you did today, grateful for years to come.

The PATZ Co.
Pound, Wisconsin

Buy From Our Advertisers — They Are Reliable

POULTRY

by Joe W. Sicer

Another look at started pullets

Some poultrymen have been well pleased with started pullets the last few years; others have not. A search for the reasons points up a basic principle of success.

STARTED pullets were popular, then unpopular, and now are popular again. In California, 25 years ago, they were an important part of the commercial poultry industry. Then they fell into disrepute, largely because there was so much disease trouble in flocks of started pullets.

Why, then, are started pullets in demand again?

During recent years, economic pressures favored larger flocks. Numerous new laying houses have capacities of 1,500 to 2,000 or more layers. Often this is the first time a flock that large has been kept on those farms.

In many cases, these farms do not have satisfactory buildings for brooding and raising that many pullets. It is much more simple, therefore, to buy started pullets nearly ready to lay.

These newcomers to the egg business, while planning their venture, probably have worked closely with a hatcheryman, feed dealer, or some other organization which has a source of started pullets readily available.

Buying started pullets transfers the risks of brooding to someone else. This is especially attractive to the man who is already running unknown risks with his new, sizable laying flock. It eliminates borrowing more money on top of an already pretty big laying-flock investment in order to get housing and equipment for brooding.

Through buying started pullets, an operator can put more time into caring for layers. If he has buildings which could be used satisfactorily for brooding, he can convert them into laying houses and increase laying flock capacity.

Some people feel they can get better pullets from a reliable specialist in pullet raising than they could raise themselves, at a price only slightly higher than their own cost could be.

If the above advantages are real, and they are, why did started pullets fade from the picture for about 20 years, and why are some people still unhappy with them?

Specialized production of replacement pullets ran into a snag two decades ago largely because of starting new broods of chicks at frequent intervals. This was necessary in order to have available a supply of pullets of several ages when poultrymen wanted them.

Gradually exposure to disease, passed on from one brood to the next, became so great the health of the average pullet was often very poor. Started pullets were even likely to introduce new infections into relatively healthy flocks. Results were so unsatisfactory that poultrymen were strongly advised to buy only baby chicks. Pullet raisers eventually discontinued their operations.

Today, dissatisfaction can arise from a number of reasons. All pullet growers are not expert at their jobs. Some make the same mistake as made 20 years ago, raising pullets of all ages on the same farm. Others raise the pullets too close to old hens. Good vaccination procedure is not always followed.

Some buyers purchase pullets from several farms thereby increasing possibility for disease trouble. Others pay more attention to "bargain" prices.

There are, indeed, many pitfalls when buying pullets. The purchaser should know his pullet grower, and check his facilities, competence, vaccination, and feeding program during the growing period. Success with the laying flock he buys depends upon the growing job.

There are cases, however, where healthy, vigorous, well-grown pullets have not done well. Remember, pullets reared in clean environment are very likely to become sick if moved into the same house with older birds on a farm troubled with chronic diseases. Sometimes trouble develops even though the pullets are not housed with other birds on such a farm.

"All-in, all-out" farms . . .

Let's consider one basic fundamental of disease control, the **breaking of disease cycles through depopulation.**

Long ago broiler raisers found their best success over an extended period if they started all chicks at one time, marketed everything, and cleaned up before bringing in new chicks.

Complete absence of all live chickens from the premises broke the potential carry-over of a number of diseases. It became known as the "all-in, all-out" system. This is what the early specialized pullet growers lacked.

The same principle applies to laying flocks. A healthy, well-grown pullet, vaccinated against a few common diseases, is moved to a farm where there are adult layers.

Such a pullet is susceptible to almost every disease on the place except those for which she has been successfully vaccinated, and probably coccidiosis. Almost immediately she is exposed in some degree to the complexity of diseases present on the farm. These diseases may crop out or remain subclinical, but they will probably affect pullet performance.

If well-raised pullets on an all-in, all-out rearing program are brought into a clean, depopulated laying setup, their prospects for a productive life will be good.

It is not intended to discredit the practice of a laying flock operator raising his own pullets under satisfactory conditions and isolation. It should be pointed out, though, that many flocks continue to be handicapped with persistent chronic diseases in spite of vaccines, antibiotics, and medication. For such poultrymen the all-in, all-out program may go far toward correcting the condition.

SWINE

by F. J. Giesler

Study government pig crop reports

They can help the entire swine industry to chart its course to furnish a steady supply of quality pork to the consumer.

FARMERS frequently ask, "What about government reports; how are they taken; who reports the number of sows to farrow; and how accurate are the reports?"

The U. S. Department of Agriculture makes sample surveys of hog producers four times each year. These surveys are made during the months of March, June, September, and December.

In these surveys farmers are asked the number and ages of hogs they have on hand; the number of sows bred and the number to be bred for farrowing during the next six months.

Reports help industry . . .

These reports can usually help farmers plan their marketing schedules.

They also help packers plan their buying and processing operations. Their figures will, in turn, help the big chain stores to plan promotion and sales programs.

In December of 1959 the estimate of 10 leading hog-producing states showed a decrease in farrowing of only 15 per cent. The actual decrease for this period was 4 per cent more than the estimate.

This should have indicated to farmers that prices for hogs over the long pull would be slightly higher, which is actually what has happened.

Some farmers feel this information should not be collected and published. They think the packers have used it to lower prices.

This may be true at times, but generally speaking, farmers might be even worse off if no reports were issued. In that event, the packers, with their agents scattered all over the United States, would still have a pretty good idea of prospective national supplies in all classes of livestock. But the individual farmer would know only how many hogs he had on his own farm and what a few of his neighbors were doing in the way of hog production.

As a rule, when buyers lack information about prospective supplies it can be very costly to the farmer. For example, the June 1955 government report indicated only a moderate increase in marketing for the fall period. But, marketings were much larger than the forecast indicated. Packers were not prepared to handle the large volume of hogs that farmers trucked to market. As a result, the packing industry did not have enough trained workers to handle the large supply of hogs even with an overtime operation.

From this experience it would appear that more frequent and more accurate information might well improve hog prices.

The purpose of collecting and reporting farmers' intentions regarding sows farrowing is to show each farmer what the whole industry is planning. If it appears that too much expansion is planned, some farmers may want to cut a little. If a lot of farmers are planning to cut, some may decide to expand their operations.

The hog industry as a whole might be on a much sounder basis if there weren't this great shift in expansion when prices tend to make it profitable for even the marginal operator to make money on his swine operation.

Seasonal price swings . . .

The history of hog prices shows that prices formerly had two seasonal peaks. The higher one was usually in September and the lower one about March. These peaks came between the largest marketing of spring pigs and largest marketings of fall pigs.

In recent years there has been only one definite price peak, usually during the summer months of June, July, and August. In the earlier years the summer high was 30 to 35 per cent above the winter low. The total seasonal rise from winter low to summer high still averaged 30 to 35 per cent.

There is even a greater difference when hog production is decreasing and less difference when production is expanding.

Past history of marketing shows that summer markets have been reasonably profitable every year. This is a trend that every hog producer should watch closely in the years ahead.

November, December, and January are considered the poor market price months during the year with December holding the lowest position of the three. There is an indication that November will tend to be the poorest marketing month in the years ahead.

A shift to year-round farrowing would take some of the load off the market during the lower months and provide for more hogs available on the year-round basis. Even more serious consideration should be given to using farrowing facilities on a year-round basis.

Producers can increase the demand for pork by stabilizing the supply on a year-round basis, as well as from year to year.

"My husband is the best farmer in Jackson County, and that's not on just my say so . . . it's his."

KILLS MASTITIS ORGANISMS

IOSAN is a patented germicidal cleaner that kills streptococcus, pseudomonas, E. Coli, staphylococcus and other organisms that cause and spread Mastitis. Its "Tamed-Iodine" killing power has been substantiated by laboratory tests that meet hospital standards. Iosan provides safe, low cost protection when washing udders and dipping teats.

IOSAN meets requirements of the U.S. Public Health Service Dairy Code as well as state and local regulatory agencies.

"TATTLES" ON MILKSTONE. Iosan quickly cleans and sanitizes bulk tanks and other dairy equipment. It "tattles" on hard-to-remove or overlooked accumulations of milkstone with a tell-tale yellowish brown "stain" that is easily removed. Reduces bacteria counts to consistent lows, leaves equipment sparkling clean.

TWO-IN-ONE PRODUCT. Iosan does all your cleaning and sanitizing. Replaces two or more products which ordinarily require separate applications. Also reduces hot water bills because it is used in tap or lukewarm water. A real time and money saver.

IOSAN is nonirritating, nonchapping and kind to hands and sensitive udders when used as directed. Used daily by tens of thousands of milk producers throughout the U.S. and Canada. For a free demonstration contact your regular supplier or *Lazarus Laboratories Inc., Div. West Chemical Products Inc., 42-16 West Street, Long Island City 1, New York.*

Buy From Our Advertisers . . . They Are Reliable.

Feed **DEHY Alfalfa Pellets**

Early, rapid growth is the key to getting big, well-developed heifer replacements on the milk line. Dehydrated alfalfa pellets provide high quality protein, important vitamins, particularly vitamin A, minerals, and growth promoting factors necessary for the early development of dairy calves. Dehydrated alfalfa also promotes rapid development of the rumen and cuts down on the calf's requirement for quality protein.

Dehydrated alfalfa pellets are easy and economical to feed, reduce storage space by 80% over bulk roughage, and saves time and labor in feeding.

Write for Your FREE Booklet TODAY

AMERICAN DEHYDRATORS ASSOCIATION

Board of Trade Building • Kansas City 5, Missouri

ADA American Dehydrators Association PASTURE IN THE BAG

Will you graze or haul feed?

by J. K. Loosli

FEEDING

If cows get all the quality forage they can eat, it matters little whether they graze or feed is hauled to them.

IN RECENT years we have heard a lot about the advantages of cutting fresh forage and feeding it to the cows in dry-lot rather than allowing the cows to graze. One of the advantages often mentioned for hauling the forage to the cows is increased forage yields.

There is extensive experimental evidence showing that forages yield more with less frequent cutting than when they are clipped at three to four inches in height. The differences are greatest with upright-growing legumes such as alfalfa. In fact, some of the taller-growing plants will not stand frequent clipping or close grazing.

The habits of plant growth explain why better results have been obtained when grazing improved pastures is controlled than when they are grazed continuously.

Almost all of the published experiments report increased milk per acre when forage is harvested and hauled to the cows.

When the forage is chopped and fed, there is little opportunity for the cows to sort and leave the stemy portions as they do when grazing. This results in less wastage if feeding is done twice daily and if the cows are given only amount of forage then can eat.

Until recently Dr. George Q. Bateman of the Utah Station has stood almost alone in favoring controlled grazing over cutting and hauling the forage.

On his irrigated pastures of mixed grasses and legumes where moisture did not limit forage growth, grazing cows produced about as much milk per acre as when the forage was harvested and hauled to them.

Especially when the labor and machinery costs of cutting and hauling the forage were considered, there was strong reason to let the cows harvest their own feed. Dr. Bateman also has stressed the value of the solid and liquid manure which is returned to the land by grazing cows.

Recently summarized tests by Dr. J. T. Reid and associates at the Cornell station agree with the Utah studies. As shown in the table over a three-year period (1957 to 1959) the most milk was produced per acre when the available pasture acreage was fenced into three lots and these rotationally grazed.

Pasture	Average production: Initial, lb.	Average production: % of initial	Milk per acre, lbs.
Zero	57.2	70.0	4,790
Strip	55.2	70.7	5,650
6 lots	60.1	69.9	5,410
3 lots	58.0	71.8	5,720

The "zero grazing" system, or hauling forage to cows, produced less milk per acre, as an average for the three years, than any of the grazing systems compared.

Strip grazing, allowing a fresh strip of pasture each day or every second day, did not result in greater milk production per acre than rotating on three or six pastures.

In one of the three years "zero grazing" resulted in the most milk per acre, but it was lowest in the other two years.

The cows used in the Cornell tests were high producers and included several of the common breeds. From the table it can be seen that the persistency of milk production was about the same on all forage treatments.

You might wonder why the results from Utah and New York differ from most other experiments. There may be several reasons, some of which are not known. One thing seems certain, namely, that in these two studies grazing management allowed the animals to eat nearly all of the forage available.

It was observed on the Cornell rotational pastures, for example, that the cows declined in milk production for one or two days before they were moved to a new pasture. This suggested they were not eating as much forage as they had before feed became scarcer.

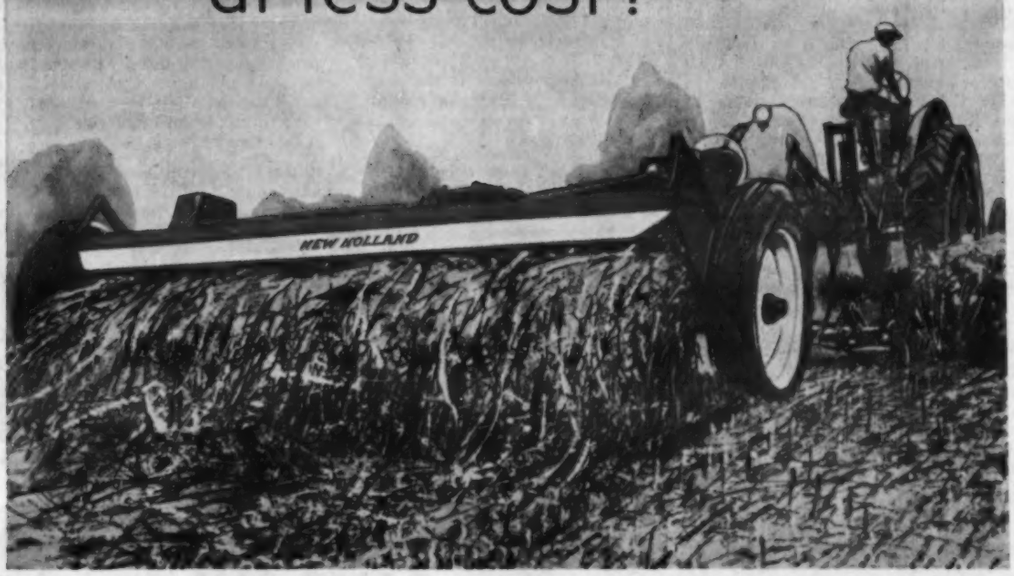
When these cows were changed to a fresh pasture, milk production increased above the previous level and seemed to result from the cows eating more than the usual amount of feed to compensate for the brief underfeeding.

This is a new observation and it is not known whether it has general application to dairy herds.

The results show that a pasture management system which provides ample high-quality forage is at least as good a program as dry-lot feeding.

BIG NEWS FROM NEW HOLLAND

better hay—faster! at less cost!



HERE IT IS—the "Speed-Cure" line from New Holland . . . lets you choose crimping *or* crushing! Designed to save you precious time, to help you make better hay!

See your New Holland dealer now. Ask him to demonstrate one or all on your farm. Easy to own, too, with your New Holland dealer's flexible New Holland finance plan!

New Holland "401" Crimper crimps stems neatly with a smooth meshing action. Leaves a light fluffy swath that dries quickly and evenly. It's easy to hook up to New Holland's all-new semi-mounted "47" Mower, so you can mow *and* crush in ONE trip! Designed to give you more field-proved features, less expensive upkeep, years of trouble-free service.

New Diamond Tread Rubber Roll on "404" Crusher is made entirely of virgin rubber, *molded* around a hard steel core. No soft or hard spots—uniform in quality and thickness so it can withstand pressures of up to 5,000 pounds. Staggered diamond tread prevents slippage, assures steady, aggressive pickup.

New! "404" Crusher with constant-pressure crushing action! Rolls open and close through normal operating range . . . maintain constant spring pressure to avoid overcrushing! Exclusive pickup height adjustment brings throat opening closer to ground. Hooks up to the new "47" mower so you can mow *and* crush in one operation.

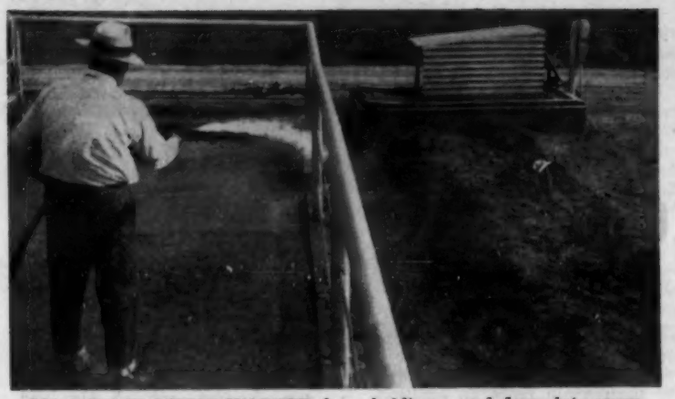
NH NEW HOLLAND
"First in Grassland Farming"

SEND THIS COUPON TODAY!

New Booklets—just out—give you all the facts on New Holland's "Speed-Cure" line! *Check one or both!*
☐ New Holland "404" Crusher ☐ "401" Crimper

NEW HOLLAND MACHINE COMPANY
Division of Sperry Rand Corporation
805B Tenth Street, New Holland, Pa.

Name_____
Address_____
City_____ State_____



MANURE IS BEING WASHED from holding corral down into sump pit where it is caught and pumped into irrigation system through three-inch pipeline. Motor and pump are protected from weather.

Easy manure disposal

Milking parlor and holding corral are washed down after each milking. Manure and water is collected in sump pit for later distribution.

by Lee Elam

WHEN Tony Costa of Visalia, Calif., went into the dairy business and built a new milking parlor and holding corrals, he planned them so that he could dispose of the manure easily.

He placed all building and corral floors, made of concrete, at a slight slope so that water would run to one end of a wing of his holding corral.

Uses sump pump . . .

With the floor so sloped, the manure is washed to the outer end of the wing of the holding corral where it runs along a concrete trough into a concrete walled sump.

The sump is 10 feet deep, 8 feet long, and 4 feet wide. Mounted on a top cover is an electric motor. This operates a short lift pump. Operation of the pump is controlled by a float switch. This turns on the motor when the liquid in the pit rises to a designated level and turns it off when the designated low level is reached.

The liquid manure is pumped into a 3-inch pipeline that takes the solution to a concrete underground irrigation line from where it is pushed onto the alfalfa and pastures by irrigation water. During winter months when there is no irrigation, the solution is pumped direct onto an irrigated pasture near the sump.

Costa points out that the use of manure sumps or pits is not unusual in California but that his is different. His is small and well enclosed. Immediate removal by pump after each washing of manure into it, eliminates the stigma of terrific odors that prevail when large pits are used, whether in the open or covered.

The small enclosed pit eliminates the chance of persons or stock falling into it, a danger always there in the case of large open sumps.

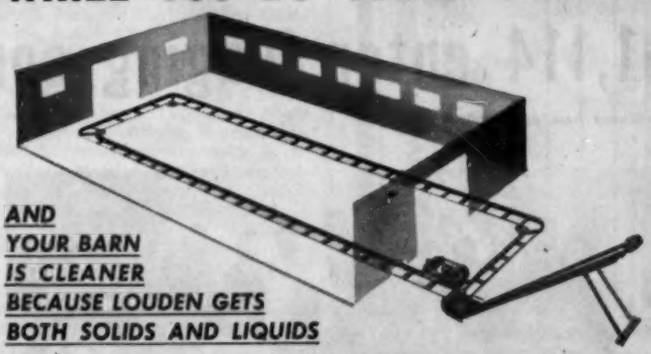
The thorough washing of the corrals after each milking eliminates any drying and caking of manure. It also goes into the sump in a liquid form, making it easy to pump onto the pastures.

The system is a big step also in eliminating fly breeding sources.

Sorrow cannot be fought and overcome; it cannot be evaded or escaped; it must be lived with.

—Elizabeth Janet Gray

LOUDEN CLEANS YOUR BARN WHILE YOU DO OTHER CHORES



AND YOUR BARN IS CLEANER BECAUSE LOUDEN GETS BOTH SOLIDS AND LIQUIDS

With a Louden cleaner in your barn, all you do is flip a switch. Your Louden "Transfer-type" Barn Cleaner takes over while you go to other chores. And what a job it does!

Gets both solids and liquids

Gutter chain travels at 14 ft. per minute. Stays in the gutter at all times. Each paddle deposits its load into the elevator hopper. Elevator paddles sweep through hopper at 55 ft. per minute. Fast enough to carry both solids and liquids up and out, with no run-back.

Longer lasting

New designed chain is made of silicon-bearing, high carbon steel. It's tough and will last for years. Links are self-cleaning. Won't freeze under ordinary conditions due to dry, crusty litter. And, if space is a problem the main drive unit and crossover can be located outside the barn.

Get complete information on how Louden can help give you a cleaner barn. *Mail the coupon today. There's no obligation.*

The Louden MACHINERY COMPANY
45 West Court Street, Fairfield, Iowa

Please send me, at no obligation, complete information on the Louden Barn Cleaner.

NAME

BOX ROUTE NO.

CITY STATE

SILO UNLOADERS

P & D SILO UNLOADERS handle hard packed and frozen silage. Large capacity saves time and labor. A boy can feed 100 head in 10 to 15 minutes. 30 days free trial on money back guarantee. Also auger bunk feeders. Dealerships available in some areas.

P & D SALES CO., Plainfield 6, Illinois

Soften UDDERS! Heal TEATS!

The **same** antiseptic ointment in which Dr. Naylor Medicated Teat Dilators are packed. Designed to relieve soreness . . . congestion. You will like this modern, more effective medication for Tender Udders, Sore Teats. $1 at drug and farm stores or write.

Dr. Naylor's UDDER BALM

H. W. NAYLOR CO., MORRIS 10, N. Y.

A Vest Pocket Herd Book Is a Good Investment

This is the CROWN Narrow-Bore Teat Cup Assembly for Better Mastitis Control . . .

Because narrow-bore liners fit the cow's teat more closely, they prevent "ballooning" of the teat itself when placed under milking machine vacuum. This greatly reduces the chance of tissue injury and the consequent development of mechanically-induced mastitis.

To quote Dr. O. W. Schalm, heading a five-man California Mastitis team which conducted extensive experiments with narrow-bore inflations:

"Considering all evidence at hand, we are of the opinion that the dairyman must reduce the potential injury to tissue that exists in the mechanical equipment before he can ever hope to control mastitis in cows."

The No. 03 CROWN NARROW-BORE LINER and the No. 040 TEAT CUP ASSEMBLY, designed especially for the 03 Narrow-Bore Inflation, fully meet the requirements outlined in the California Mastitis Control Plan.

CROWN

No. 040 Narrow-Bore Teat Cup Assembly

Mail this Coupon for full information

CROWN DAIRY SUPPLY CO., AO-0709
326 West College Ave., Waukesha, Wis.

☐ Please send full details about Crown Narrow-Bore inflations.
☐ Send reprint containing detailed reports covering California Mastitis Control experiments.

Name.....
Address.....
I use a..... Milker.

BRAND NEW! FASTER-EASIER-BETTER!
A One-Man Hay Spreader-Conveyor System!

Aerovent's new hay conveyor-spreader system improves drying efficiency, makes haying more profitable. One man handles the operation. System eliminates hot spots and plugged blower lines; keeps dust down; leaves stay on stems. Requires far less electricity. Adjustable, reversible sections fit any barn. Investigate this new development today!

FOR INFORMATION WRITE (Dealer Inquiries Invited)

AEROVENT
P.O. Box 9007 — Lansing, Michigan

YOUNG DAIRYMEN

81,114 enter judging contest!

(Continued from page 509)

WINNING 4-H CLUB: Montgomery County 4-H Jersey Calf Club, Md. Front row, left to right: Mike Stiles; Paul Stiles; Tommy Fraley; R. N. Whipp, associate county agent; Roger Vail; Bucky Thrift; and Leland Pope. Second row: Barbara Whipp; Connie Mills; Robert Stiles, Charles Schwartzbeck, and Sidney Mills, local leaders; Dora Jane Fraley; Rose Ann Glover; and Sherry Whipp. Third row: Coleen Pearson; Keith Vail; Blair Stiles; Charles Schwartzbeck, Jr.; Robert Hurley; Kenneth Stiles; Gary Pope; Conrad Mills; Norman Fraley; William Gregg; Melvin Glover, Jr.; Kathy O'Boyle; Kathy Schrider, Priscilla Johnson; and Eileen O'Boyle.

WINNING HIGH SCHOOL: Front Royal FFA Chapter, Front Royal, Va. Left to right: Franklin Knight; Charles Grove; Tuck Tobin; J. J. Foster, instructor; Robert Price; Paul Dixon; Frankie Derflinger.

WINNING COLLEGE: Ohio State University, Columbus, Ohio. Left to right: Richard Horne, Canton; Ronald Long, Miamisburg; James Clay, Freeport; Kenneth Vaughters, Portsmouth; John McKitrick, Bethel Road; Hugh Knoop, Fletcher; Richard Soldner, Springfield; Myron Wehr, North Lima; Russell Nyland, Jefferson; Ann Prince; and Harold Kaeser, coach. The cow is Ohio Gift Adequate, member of the University herd, that produced 17,926 M., 869 F. as a senior 4-year-old. About half the team members milked her during the lactation, since the labor force consists of students.

home farm of 160 acres, renting for 9 years before buying it 3 years ago. With his son, George, the partnership rents an additional 130 acres with 45 head of dairy cattle and 300 laying hens providing the main income.

Active in civic and farm organizations, Mr. Ott received the Honorary Keystone Farmer Degree in 1947 and the Honorary American Farmer Degree in 1956. His Bangor FFA chapter is very active on a local and state basis.

Ott's closest competitor, with a score of 490, was Tom Straka, vocational agriculture instructor at Lake Stevens, Wash. Raised on a dairy farm in Whatcom County, Washington, he received the State Farmer Degree as a result of his dairy projects.

Since he began coaching dairy judging teams in 1954, his chapter has won 23 banners in FFA competition, including two firsts at the Carnation Farms contest and one first at the Pacific National exposition. A judge of several local fairs, Straka is a strong believer in judging contests as a method of developing leadership through public speaking.

Two men tied for third; the best reasons score was compiled by Leo Vossler, vocational agriculture instructor at Parshall, N. Dak. The fourth prize award goes to Harold Stanley, Thomas Downey High School, Modesto, Calif.

The following receive Honorable Mention: Edward Leal, Modesto, Calif.; A. B. Foster, Washington College, Tenn.; Howard Hanni, Davis, Okla.; Curtis Griffin, Collinsville, Okla.; Harold Gilkey, Longview, Wash.; H. Eugene Forrester, Ellensburg, Wash.; Frank Freeman, Phillipsburg, Kans.; R. E. Brown, DeKalb, Ill.; and T. C. Ellis, Blue Springs, Miss.

Donald Kaeser top junior . . .

There was a real battle for top honors in the junior division. Three high school boys tied for first place with scores of 492 while there were 11 scores of 490 for the next nine prizes.

The eventual winner, based on reasons, was Donald Kaeser, high school senior from Columbus, Ohio. Don, who with his brother, Kenneth, and father, Harold, won first in the family division as well. The Kaesers live on an acreage outside Columbus and the boys have worked with Ohio State University cattle several years. For many summers, Don has worked with show herds during the Ohio State Fair and has traveled with the Franchester show herd.

Harold Kaeser, who also coached the winning college team, is a nationally-known dairy cattle judge who has been on the Ohio dairy staff since 1941. The previous year he won the Intercollegiate Dairy Cattle Judging Contest while a member of Iowa State's judging team. Twice he has judged at the National Dairy Cattle Congress and four times at the Chicago International. His college teams have won two national contests and three firsts at the Eastern States Exposition. He judges many state and regional shows.

Jim Johnson, son of Mr. and Mrs. Marion Johnson, Kirkwood, Ill., placed second in the junior division. A high school senior, he lives on a 350-acre dairy and grain farm and owns 17 registered Holsteins. The herd consists of 90 registered and grade Holsteins. A 4-H member for eight years, he has had six years of judging experience which includes twice at the state 4-H judging contest and twice at the state FFA contest.

Third place junior was Jim Meisenheimer, a student at Pretty Prairie High School, Kansas. He lives on a wheat farm consisting of 1,000 acres with 100 sheep as his livestock project. He has participated in the Hoard's Dairyman Cow Judging Contest since enrolling in vocational agriculture three years ago. Last year he was high individual in Brown Swiss at the Reno County Dairy Festival at Hutchinson, Kans.

Fourth prize winner was Ronald Stinson, Richmond, Ontario, Can. (member of the second prize family); followed by Kathleen Roberts, Whitehall, N. Y.; Paul Busby, Davis, Okla.; Stuart Young, Truxton, N. Y.; David Keefer, Pine Grove, Pa.; Mary Droste, Waverly, Iowa; John Hunter, Collinsville, Okla.; Floyd Marti, Sleepy Eye, Minn.; and Terry Steinhausen, Cheyenne, Wyo., in that order.

The following receive Honorable Mention: Charles Preusser, Orland, Calif.; Bruce Westergren, Bertha, Minn.; Lois Spahr, Findlay, Ohio; Lewis Edgett and Donald Bossard, Hornell, N. Y.; John Sweeney, Cortland, N. Y.; Paul Hatfield, North Manchester, Ind.; George Nunes, San Rafael, Calif.; Richard Wink, Mechanicsville, Iowa; and Robert Stegen, Cherry Valley, N.Y.

Canadian family second . . .

There were 1,167 family entries, an all-time high, with entries from every state except Nevada, Hawaii, and Alaska. Following the Harold Kaeser family was the family of W. A. Stinson, Richmond, Ontario, Can. They operate a 200-acre farm and breed registered Holsteins. Last year their herd was second in the county for production and they do considerable showing. Mr. Stinson is president of the county Holstein club and has attended several dairy cattle judging conferences. Besides Mr. and Mrs. Stinson, the family entry included Ronald, 11; Lynne, 12; and Sandy Snedden, herdsman.

Winner of third prize was Mr. and Mrs. Charles Lodge and their daughter, Linda, Cambridge Springs, Pa. They have some 40 Guernseys on their 138-acre farm. Linda, a 4-H member for six years, now owns seven head. She has shown at the National Junior Guernsey Show at Waterloo two years and has been a member of the county 4-H dairy judging team the past two years.

Roland Young and his two sons,

HEAVE HAY — The LOW-COST WAY

FARMRITE PORTABLE
ELEVATOR-CONVEYOR

Light-weight — and made of tubular steel in 18, 24, 28 ft. sections for one-man handling. It handles any size or shape bale — any gas or electric motor ¼ h.p. up will run it.

Extendable — Add extra sections by simply inserting pin through interlocking drive sprocket — and move bales any desired distance — or up and over for stacking.

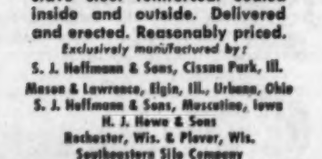
For permanent set-ups, mow hangers, bale ejecters are available — 12 ft. extensions fit Farmrite Conveyor System to any size barn.

For complete details — Write

FARMRITE SPRAYER, INC.
Juneau 2, Wis.

1914 RIBSTONE SILOS 1960
LICENSED UNDER PATENT NO. 2591607
Only RIBSTONE Silos have these pioneer advantages

Dense, non porous concrete. strong, rib construction. Each stave steel reinforced. Sealed inside and outside. Delivered and erected. Reasonably priced.
Exclusively manufactured by:
S. J. Hoffmann & Sons, Cissna Park, Ill.
Mason & Lawrence, Elgin, Ill., Urbana, Ohio
S. J. Hoffmann & Sons, Muscatine, Iowa
H. J. Howe & Sons
Rochester, Wis. & Plover, Wis.
Southeastern Silo Company
Augusta, Ga., Petersburg, Va., Athens, Tenn.



FREE! Ask your nearest Ribstone dealer for a free silo capacity chart.

YOUR OWN BREED ON YOUR STATIONERY
We print stationery for thousands of breeders all over the U.S.A. Distinctive style and personal touch. Pictures of your own breed for you to choose from. Write for stationery circular today.
HOARD'S DAIRYMAN Fort Atkinson, Wis.

• Complete with Nylon neck cord
• 7 color combinations
• Solid Nylon with Nylon numbers (no paint)
• Guaranteed unbreakable

DANA Self-Fastener MARKER
Complete and Postpaid only 84¢ each
(less in quantities)
Write for FREE illustrated folder
C. H. DANA CO., Inc. - Est. 1861
Hyde Park 9, Vermont

Ronald and James, Miamisburg, Ohio, won fourth prize. Ronald was a member of the winning Ohio college team and in 1959 was a member of the Ohio State University dairy judging team. A senior majoring in dairy science, he has been a 4-H member for 11 years. Jim, who helps his father operate the 200-acre farm, has shown dairy cattle for the past two years.

Honorable Mention in the family division include: Duane Wylam, Waverly, Iowa; James Krause, Kewanee, Ill.; Ray Combes, Carnation, Wash.; John Knoop, Fletcher, Ohio; Wilbur Becker, Fort Atkinson, Wis.; C. Ellsworth Iager, Fulton, Md.; George Nyland, Jefferson, Ohio; J. C. Miller, Miami, Okla.; Harlin Risseeuw, Clinton, Wis.; and Alvin Dixon, Ames, Iowa.

Virginia FFA chapter wins . . .

Of the 1,595 high schools from 48 states that participated, top score was 470, compiled by the Front Royal FFA Chapter, Front Royal, Va. According to coach J. J. Foster, who organized the Warren County High vocational agriculture department in 1927, this perhaps is the smallest official chapter in the United States, with a membership of just six boys. The small enrollment is due to the "battle over integration" which caused the school to close for part of the 1958-59 school year and, since reopening, many of the pupils have remained out of school or attend a private school.

The Front Royal FFA chapter has participated in several Hoard's Dairyman contests. Three of the team members won the Virginia FFA dairy judging contest in 1957 and competed in the National Contest at Waterloo, Iowa.

Second prize high school was from Collinsville, Okla., whose instructor is Curtis Griffin. In third was the Damascus High School, Damascus, Md., coached by L. E. Tolley, followed by Belleville High School, Belleville, Kans. (first place winner in 1957), coached by Carl Beyer.

Honorable Mention in the high school division and the instructors' names include: Clinton High School, Clinton, Wis. (winner in 1958), L. W. Beadle; Snohomish High School, Snohomish, Wash., Larry Gilbertson; Granger High School, Granger, Tex., E. D. Clement; Raton High School, Raton, New Mex., Bosko Krivokapich; Rocksprings High School, Rocksprings, Tex. (winner in 1953), J. E. Tatum; Lake Stevens High School, Lake Stevens, Wash., Thomas Straka (second prize winner in vo-ag division); Gale-Ettrick High School, Galesville, Wis., J. O. Beadle; Marathon Central High, Marathon, N. Y. (winner in 1955), L. E. Harvey; Gotebo High School, Gotebo, Okla., E. L. Goodwin; and Owensville High School, Owensville, Ind., Howard Lawry.

Ohio State top college . . .

There were 125 college teams from 32 states and Canada, Rhodesia, and New Zealand. As mentioned earlier, the winning team from Ohio State University (also first prize winner in 1957) was coached by Harold Kaeser. The team members included: Richard Horne, Ronald Long, James Clay, Kenneth Vaughters, John W. McKitrick, Hugh Knoop, Richard Soldner, Myron Wehr, Russell Nyland, and Ann Prince.

Second prize in the college division was won by Pennsylvania State University, coached by James R. Nichols, while Kansas State University (winner in 1958), coached by G. B. Marion, placed third.

South Dakota State College, coached by Howard Voelker, had the next three ranking teams. Others in the Honorable Mention group include: Northeastern Oklahoma A and M, J. C. Miller; Oklahoma State University, E. R. Beroušek; Iowa State University, C. F. Foreman; Texas A and M College, M. A. Brown; California State Polytechnic Institute, Russell Nelson; University of Kentucky, R. E. Walton; North Carolina State College, W. R. Murley; and Cornell University, G. W. Trimberger.

Maryland clubs win again . . .

Maryland 4-H clubs practically swept the 4-H division, having the first, second, and third prize winners. This is the sixth time in the past nine years Maryland has won the 4-H division and the fourth time the winner has come from Montgomery County.

This year the high team was the Montgomery County Jersey Calf Club, led by Robert Stiles and Sidney Mills, Rockville, Md. (also winner in 1956); while the Montgomery County Holstein Calf Club led by Irving King (winner in 1954-55), won third prize. Second prize winner was the New Market Boys 4-H Club, led by John Stiles and Ethan Summers, New Market, Md. Fourth prize winner was the Homer Braves 4-H Club, led by Leonard Morgan, Homer, N. Y.

Honorable Mention in the 4-H division and their leaders' names include: Theaker 4-H Club, Geuda Spring, Kans., John Weir; Baltimore County 4-H Club, Towson, Md. (winner in 1957), William Hill; South Hill Dairy Club, Cortland, N. Y., Mr. and Mrs. Clarence Somers; Willing Workers Dairy Club, East Springfield, N. Y., Kimber Spargs and Ervin Fassett; Junior Herdsmen and The Livewires, both clubs led by Robert Burch, North Manchester, Ind.; Mills River 4-H Club, Horse Shoe, N. Y., John McLean; Martha Washington 4-H Club, Winfield, Kans., Gene Birdzell; Herders 4-H Club, Hillsdale, N. Y., Richard Clapp; and the Fabius Goodfellows, Fabius, N. Y., Donald Duba.

Senior winners:

1. Earl N. Phillips, Beaver Crossing, Nebr.
2. William L. Carroll, Rosemount, Minn.
3. Lewis Porter, Elgin, Ill.
4. George O. Ott, Bangor, Pa.
5. Max A. Parks, Bronson, Mich.
6. Herbert Weisheit, Purdue Univ.
7. Jack J. Dexter, Fort Collins, Colo.
8. Hugh Knoop, Ohio State Univ.
9. W. Levis Phipps, Jr., Wilmington, Del.
10. Stanley Murphy, Tully, N. Y.
11. J. R. Stevenson, Opelika, Ala.
12. Lee Smith, Grants Pass, Ore.

Junior winners:

1. Donald Kaeser, Columbus, Ohio.
2. Jim Johnson, Kirkwood, Ill.
3. Jim Meisenheimer, Pretty Prairie, Kans.
4. Ronald Stinson, Richmond, Ontario, Can.
5. Kathleen Roberts, Whitehall, N. Y.
6. Paul Busby, Davis, Okla.
7. Stuart Young, Truxton, N. Y.
8. David Keefer, Pine Grove, Pa.
9. Mary Droste, Waverly, Iowa.
10. John Hunter, Collinsville, Okla.
11. Floyd Martl, Sleepy Eye, Minn.
12. Terry Steinhausen, Cheyenne, Wyo.

THE END

Waverly JOHN WOOD

JOHN WOOD COMPANY
WAVERLY EQUIPMENT DIVISION
ROYERSFORD, PA.
NAME
ADDRESS
CITY STATE
SIZE OF HERD

This cooler gives you 3-WAY profit protection!

Here's how John Wood quality-built bulk milk coolers protect your profits:
1. You never lose a tank of milk. Emergency cooling provision keeps milk at safe temperatures — even during power failures.
2. Dependable cooling helps you earn premium payments for premium quality milk.
3. Efficient John Wood cooling brings you substantial savings on every month's electricity bill.

FREE booklet provides detailed information on bulk cooling. For your copy of "MODERN MILKHOUSE MUST — A COOLER YOU CAN TRUST," mail this coupon today.

NEW ANTIBIOTIC PRODUCT PRESERVES GRASS SILAGE!

SILOTRACIN

Silotracin insures against the guesswork in silage making . . . makes silage more profitable. It prevents spoilage, preserves valuable proteins, stops offensive odors.

Silotracin's antibiotic action discourages those bacteria in the silo which cause rotting and foul odors. At the same time, Silotracin encourages those valuable bacteria that turn sugars and starches in your freshly chopped grass into the necessary preserving acids (lactic, acetic, propionic).

Silotracin has been tested for several seasons in college field trials on a wide variety of grasses. It's easy and safe to apply — will not irritate skin or eyes. And because Silotracin is non-corrosive, it cannot harm equipment.

Silotracin goes right to work as you fill the silo—and it keeps right on working until conversion into fresh, sweet, palatable silage is complete. There is no antibiotic remaining in the finished silage and, of course, none can appear in the milk. This spring, ask for a silage preservative containing Silotracin.

Remember! Experts agree that the use of a preservative does not lessen the need for effective packing and sealing of the forage. Preservatives are no substitute for good management.

ANIMAL NUTRITION DEPARTMENT
COMMERCIAL SOLVENTS CORPORATION CSC
260 MADISON AVENUE, NEW YORK 16, N.Y.

Vollrath STAINLESS STEEL Bulk Tank Milk Strainer

Won't wear out! Uses 6½" filter disc! Sanitary, Seamless! Now . . . Low design! Also fits standard milk can neck!

Best for bulk! This highly polished strainer is specially punched to give a maximum straining area. Made for quick, easy assembly and cleaning. Will last indefinitely. A favorite with dairymen everywhere!

No. 9216. 18 qt. capacity

UTILITY OR DAIRY PAILS
5813 13 qt.
5816 16 qt.
5820 20 qt.

MILK STIRRERS
9232 Perforated
9233 Solid, Lipped

THE VOLLRATH COMPANY • Sheboygan, Wisconsin
Producers of Vollrath Stainless Steel Dari-Ware•Cookware•Housewares•Porcelain Enameled Ware

The tie that binds the udder

Breed for strongly-attached udders; those that are low hanging and poorly attached are the most susceptible to serious injuries.

by Lawrence Stratton, Jr.

THE old saying that a chain is only as strong as its weakest link could well apply to the udder of a dairy cow. This organ, the very reason for the existence of the dairy cow, is only as strong as its attachments.

Of some 20 million dairy cows in the United States, more than 5 million or one-fourth will leave the herds in 1960. This amounts to a staggering loss of more than $1 billion. One of the greatest causes for this loss is udder injury, which may be dramatic as a barb wire gash, or as subtle as a small bruise which later develops into mastitis.

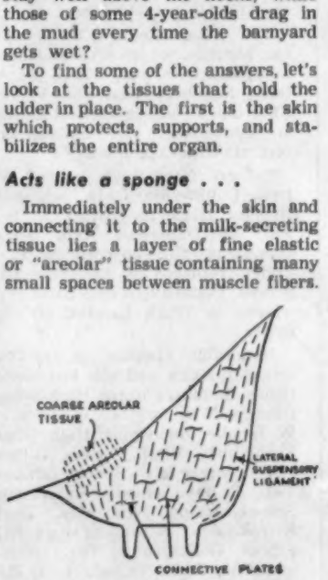
Many udder injuries stem from one cause—an udder that hangs too low. Why are the udders of some 17,000-pound producers held highly and tightly enough to give no trouble, while those of some 8,000-pound producers nearly touch the ground?

Why do the floors of some 14-year-old "grandmothers'" udders stay well above the hocks, while those of some 4-year-olds drag in the mud every time the barnyard gets wet?

To find some of the answers, let's look at the tissues that hold the udder in place. The first is the skin which protects, supports, and stabilizes the entire organ.

Acts like a sponge . . .

Immediately under the skin and connecting it to the milk-secreting tissue lies a layer of fine elastic or "areolar" tissue containing many small spaces between muscle fibers.



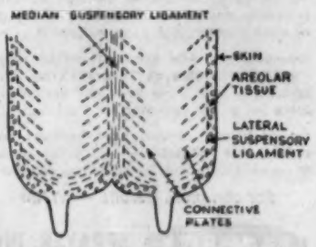
This cushion which resembles a living sponge gives additional protection from injury.

Another layer of coarser areolar tissue forms a loose, cord-like band resembling millions of tiny rubber bands between the upper surface of the front quarters and the abdominal wall.

Sheets of fibrous tissue called lateral suspensory ligaments extend downward and forward over the outer part of the udder like the wrapping on a heavily-insured package and attach to the small plates of connective tissue. These enter the gland in sling-like layers and give support to the secretory tissue at every level. Since these lateral ligaments are relatively non-elastic and fibrous, they are probably a chief means of udder support.

Why udder floor drops . . .

The median suspensory ligament extends down through the udder to separate the halves. Its function is to hold the udder close to the abdominal wall, but like a rubber sheet it is more elastic than the lateral ligaments, so the udder will stretch downward in the middle as it fills with milk. This causes the udder floor to drop and the teats to protrude outward or "strut."



When this ligament becomes permanently stretched, the udder sags or breaks away.

To know the cause of low-swaying udders is important, but the dairyman needs to know how to prevent the loss of valuable animals through injuries.

Begin your program by selecting a herd sire from a cow family noted for strong udder attachments. Then give heavy producers special care. An udder carrying 50 pounds of milk is under great pressure at every step. If a cow should become excited and run away from a dog, or from the neighbor boy's well-directed sling shot, the extra strain on the udder could easily cause permanent damage—within hours.

Lastly, take extra precautions whenever the udder is under extra strain. Excess "caking" or edema prior to calving can increase the weight of the udder by 35 to 40 pounds, more than the weight of two 16-pound sledges strapped to her.

Massage the udder often when it is caked, rubbing it from front to rear, and slightly upward to increase the blood circulation and hasten the lymph flow back into the blood stream.

In summary, breed for high, tightly-attached udders, and then give a little extra care to those heavy producers. It will mean more dollars in your pocket and less cow turnover in your herd.

Hay needed in ration

Bossy prefers a hay-silage diet to one of all silage, Michigan State University dairy researcher C. A. Lassiter reports. Recent research at Michigan State has shown that dairy cattle will not eat as much feed or produce as much milk when fed all silage as when some hay is included in the ration. Cows fed all silage will consume about 30 per cent less dry matter than when fed both hay and silage.

Lassiter, head of the M.S.U. dairy department, points out, however, that silage can make up one-half of the total roughage with no significant drop in milk production. Advantages of silage feeding, such as mechanized feeding, may offset differences in either milk production or feed intake. Since corn silage contains some grain and additional dry matter, the greatest differences appear between grass silage and rations containing hay.

PERMASOFT® UDDERSPONGE
Really is the "Uddermost"

Permasoft® Uddersponge is bacteria resistant—won't mildew nor sour. No objectionable odor ever. Can be boiled or placed in any standard sterilant. Won't shred nor crumble. Always soft and flexible, wet or dry. Holds lots more water than rags or paper. Washes and warms the udder quickly, thoroughly. The cow loves it. Upgrades your milk. Costs less than even paper towels. 35c each, package of 3—8" x 8" uddersponges at your dealer or postpaid for $1.00.

This new Roldip® ice cream dipper makes it easy to serve ice cream. It cuts and rolls the portion—saves broken tablespoons, bruised hands. One-piece casting of sanitary metal, easily cleaned. Releases the portion when touched to dish or cone. Price $1.00.

Trial Offer 3 Permasoft Uddersponges and 1 Roldip dipper—postpaid, $1.75. No stamps—cash or check.

ROLL DIPPERS INC., Naumee, O.
Also manufacturers of ice cream dippers and spades since 1935

It's a TITAN
MILK TANK BRUSH
Job Tested
Unquestionably the world's finest line of dairy brushes. Ask your dealer
FLOUR CITY BRUSH CO. 1501 4th Ave. So. Minneapolis, Minn.
PACIFIC COAST BRUSH CO. 2030 East 7th St. Los Angeles, Calif.
FLO-PAC BRUSHES

KICKING COWS "GENTLED" INSTANTLY!
with NEW CATTLE GENTL-IZER
ONLY $14.95 PPD

• Make more money milking than selling her! Amazing new Easier Cattle Gentl-izer safely quiets toughest cow in your herd with gentle pressure that prevents cow from moving its hind legs. Easy to put on, no chains, no danger, no injury. Safe, sanitary. Thousands in use. Try 10 days at our risk on money-back guarantee. Specify breed and size when ordering. Only $14.95 ppd. ($15.95 west of the Rockies). U.S. Pat. 2655900; Canadian Pat. Pend. (DEALERS AND AGENTS WANTED)
PRIDE HYBRID, INC. Dept. HD-92 GLEN HAVEN, WIS.

Frohring
Tractor Mixers Do More Cost Less
Mixes concrete, mortar, feed, inoculates seed, prepares hothouse and cold frame soil, etc. MIXES WHILE DRIVING OR STATIONARY—POSITIVE DRIVE. Fits Ford, Ferguson, John Deere 40, Oliver 55, etc. Easily mounted or removed by one man in less than 5 minutes. Raised and lowered on tractor hydraulic lift while driving from PTO shaft. Two types and sizes available. See your implement dealer today. Or write to
R. L. FROHRING MACHINE CO. Box 83, Newbury, Ohio

Kosch side-mounted FARM MOWER
SAVES TIME—LABOR—FUEL in multiple haying operations
Side mounting permits use of drawbar for second implement, while PTO extension provides power. Look ahead. See where you're going. See where you're mowing. Priced at $388.00 to $425.00 f.o.b. factory. Complete with 7 bar and 7 sickle. Available also with 6' and 9' bars.
WRITE for NAME of NEAREST DEALER
KOSCH MFG. CO. Dept. HD, Columbus, Nebr.

Strohmeyer and Carpenter negatives transferred

On April 15 the firm of Strohmeyer and Carpenter, Inc., White Plains, N. Y., transferred its file of more than 130,000 livestock and cover negatives to the Van Dervort Studio, Cobleskill, N. Y.

H. A. Strohmeyer, Jr., and J. T. Carpenter, Jr., partners since 1928, will continue their business of photographing dairy animals. However, the Van Dervort Studio will produce all duplicate prints from Strohmeyer and Carpenter negatives, both from those in the present file and the ones made in the future.

The Van Dervort Studio, located near Albany, has been in operation since 1937 and offers a complete photographic service. The unique and important Strohmeyer and Carpenter file will be preserved intact and the same high-quality prints will continue to be available.

Atwood returns to Rhode Island

John Atwood, assistant advertising manager of the Guernsey Breeders Journal, has resigned to accept a position as extension dairyman at the University of Rhode Island.

A dairy production graduate of the University of Connecticut in 1941, he received his masters degree in agricultural economics from the University of Rhode Island in 1953. From 1941 to 1947, he was employed by H. P. Hood and Sons.

He is returning to Rhode Island, where he spent five years before joining the American Guernsey Cattle Club. In his new position, he will serve as associate professor of dairy extension, extension dairyman, and superintendent of testing.

Homestead Sale averages $821

Buyers from 8 states paid an average of $821 for Homestead-bred cattle in the top of the Homestead Sale at Waukesha, Wis., March 28.

Dr. Edyth Swarthout, West Salem, Wis., purchased the top-selling animal, Carnation Skylark Madcap Nona, consigned by Carnation Milk Farms and selling for $2,725.

This was the first Homestead bloodline sale, sponsored by the Homestead Club and managed by Piper Brothers, Watertown, Wis.

Following is a list of other high-selling animals with buyers' names:

Newport and Oelerich, Iowa Perry Carnation Hoesly "Ex"	$2,350
Manning Creamery Co., Iowa Distinction Princess Profile	2,100
Calvin Meyer, Illinois Elmer Brook Homestead Favorite	1,825
Melvin Fitzpatrick, Michigan Carnation Butter Boy Worthy	1,650
Kingsmill Dairy, Virginia Carnation Skylark Plebe Bessie	1,650
J. W. and Jimmie Eustice, Va. Christy Skylark Calliope	1,375
Allen L. Furce, Michigan Christy Homestead Caroline "Ex"	1,350
Wisconsin State Reformatory Graming Homestead Marion	1,150
Leonard Woefel, Wisconsin Christy Butterlee Ballerina	1,080

"It's a woman with a voice like a silage chopper."

DAIRY

• Baird Hammond, General Manager of General Cochran Farm, Ft. Plain, N. Y., home of one of the outstanding Holstein herds in the country, controls hornflies this fast, easy way. When hand-dusted as directed, Du Pont "Marlate" methoxychlor does not result in residues in milk.

For fast, easy, economical fly control hand-dust Du Pont Marlate® methoxychlor

No other insecticide is easier or more economical to use than methoxychlor. No other gives longer-lasting, more effective protection. One tablespoonful of Du Pont methoxychlor ("Marlate" 50 or Dairy Cattle Insecticide) per cow, applied just as it comes from the bag, will control hornflies for about three weeks. One 4-lb. bag treats 20 to 30 cows for a season.

Also, use "Marlate" methoxychlor to kill flies in the barn and on the premises. For either use, simply follow directions on the bag.

DU PONT
BETTER THINGS FOR BETTER LIVING ...THROUGH CHEMISTRY

On all chemicals, always follow label instructions and warnings carefully.

CLEAR THE DECK OF YOUR UNUSED MACHINERY AND EQUIPMENT

Sell it now! The market is favorable . . . the results **QUICK**. Sell it for **CASH** by advertising in the Special Opportunity section of Hoard's Dairyman.

Rates 35¢ per word including name and address.

Send your classified ad order today to Hoard's Dairyman, Fort Atkinson, Wisconsin.

CONTINENTAL
FIRST NAME IN POWER FOR THE FARM

Continental not only powers the leading makes of specialized farm equipment, but builds a complete line of industrial and irrigation engines and power units for an almost endless list of applications wherever power is required . . . and after-the-sale service is making them first choice for an ever-widening list of jobs in the agricultural and industrial fields.

Every Red Seal irrigation power plant is engineered for irrigation use—designed and built to obtain the maximum output from today's high-speed pumps. They are getting the call for more and more of these jobs, because they have made good as a source of such specialized power.

SERVICE AND PARTS AVAILABLE EVERYWHERE

Continental Motors Corporation
MUSKEGON • MICHIGAN

NEW herbicides

Here are some new chemicals that you will be hearing about. When using, follow recommendations closely.

THE following summary is based on results reported at the recent North Central Weed Control Conference and covers several compounds. Only the more recently-introduced compounds have been included. For clarification, the common name, trademark, or code number precedes the chemical nomenclature.

Carbyne (4-Chloro-2-butynyl N-(3-chlorophenyl) carbamate) used as a post-emergence selective spray at rates of ½ to 1 pound per acre has given good control of wild oats with only slight injury to spring wheat, barley, or flax. Treatment at the 1½-leaf stage has been most effective and relatively low spray volumes have been more effective than higher volumes. It has been much less effective where incorporated into the soil prior to planting.

Used as a post-emergence spray it has been relatively ineffective on green foxtail and certain broad-leaved weeds including wild buckwheat. In one pre-emergence test used at 6 pounds per acre, it gave fair weed control with severe injury to red beets.

Avadex (2,3-Dichloroallyl diisopropylthiolcarbamate) has given effective control of wild oats where used at rates of 1 to 3 pounds per acre incorporated into the soil prior to planting. Residual phytotoxicity to crops has varied from none to severe.

Fenac (sodium 2,3,6-trichlorophenylacetate) used pre-emergence at 2 to 4 pounds per acre on corn gave weed control ranging from poor to excellent. Grain sorghum was injured by both pre- and post-emergence applications. In combination with tillage it effectively controlled quack grass at 15 to 30 pounds per acre. Applications made pre-plowing to established Johnson grass at rates up to 8 pounds per acre gave poor control and residual injury to corn. Used as a soil sterilant at rates of 8 to 16 pounds per acre it gave good control of leafy spurge, bur ragweed, and tanweed. For pre- or post-emergence crabgrass control in bluegrass turf, it resulted in poor control and considerable turf injury.

Amoben (triethylamine salt of 3-amino 2,5-dichlorobenzoic acid) has given good annual weed control in soybeans with little or no crop injury used pre-emergence at about 4 pounds per acre. Crop injury was reported where used pre-emergence on corn, sorghum, flax, and red beets. Sweet clover, birdsfoot trefoil, and alsike clover apparently are relatively tolerant while red clover and alfalfa are susceptible to the compound. In several post-emergence tests the material was relatively inactive.

Zytron (O-(2,4-dichlorophenyl) O-methyl isopropylphosphoramidothioate) used pre-emergence for crabgrass control in bluegrass turf it has been very effective at rates of 15 to 20 pounds per acre. Poor control was reported from Indiana in 1959. Spring treatments usually have given satisfactory crabgrass control for the season and bluegrass has shown a favorable growth response.

Poor results have been reported and the compound appears to offer little promise for mid-season post-emergence crabgrass control.

Late summer and early fall treatment at rates of about 40 pounds per acre have been effective in controlling crabgrass in turf for the following year.

Control of annuals has been variable and often poor where used pre-emergence on field crops.

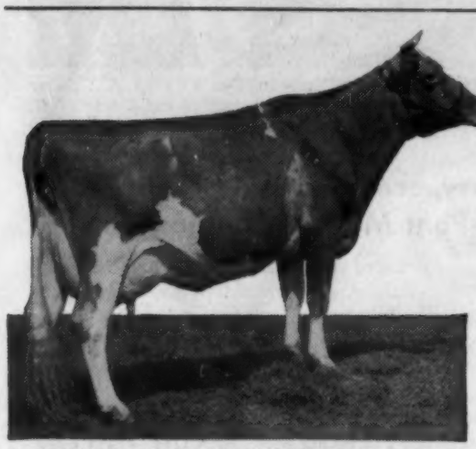
Atrazine (2-Chloro-4-ethylamino-6-isopropylamino-s-triazine) gave good control of annual broad-leaved weeds and grasses without crop injury where used pre-emergence on corn at about 2 pounds per acre. Many other crops are injured by the compound. A post-emergence treatment was very injurious to carrots, but was tolerated by corn. It shows promise as a pre-plowing foliar treatment for quack grass at 4 to 8 pounds per acre in areas to be planted to corn.

Propazine (2-Chloro-4,6-bis-(isopropylamino)-s-triazine) was used pre-emergence on corn as well as pre-and post-emergence on grain sorghum. Results indicate that grain sorghum will tolerate rates up to 2 pounds per acre either pre- or post-emergence. Degree of weed control was variable.

Falone (Tris(2,4-dichlorophenoxyethyl) phosphite) was used pre-emergence on corn and grain sorghum at rates of 2 to 6 pounds per acre with variable results. Control of annual weeds was usually poor and injury to each crop was reported in at least one report.

DAC-893 (Dimethyl-2,3,5,6-tetrachloroterephthalate) used pre-emergence at 4 to 8 pounds per acre gave poor weed control without injury to corn or grain sorghum and good weed control without injury to soybeans. In one test it resulted in good control of crabgrass in bluegrass turf, at rates of 7.5 and 10 pounds per acre.

Urab (3,Phenyl-1,1-dimethylurea trichloroacetate) used pre-emergence at 3 pounds per acre on carrots resulted in poor weed control and no crop injury.



Hominy Hill Champion Fern First Best Udder and Reserve Grand Champion at Eastern States Exposition. Also, First Aged Cow and Grand Champion at Conn. State Show. Her last record as a class leader was 16,784 lbs. milk, 779 lbs. fat.

AR LEADER NYALA ANTON'S INDIGO
14685 — 826-5r4 — 305 — 2X 2nd Fat Production

TYPE AND PRODUCTION ON WIRTHMORE®

At Nyala Farm

Nyala Farm, Greens Farms, Conn., is owned by F. T. Bedford, and under the capable management of Horace B. Lanute. They have made many outstanding records in the show-ring as well as producing AR Class Leaders.

Mr. Lanute says:

"I want to congratulate you on your fine work in feed formulas. I am more than pleased with Wirthmore Calving Feed. It sure gets the cows into peak of condition.

Indigo is fresh again. Yesterday she was up to 64 pounds in her second month on Wirthmore 16 Record Ration.

Fern looks like a million — about ready to calve.

We're looking forward to the best year ever with Wirthmore Feeds."

YOU'LL GET GOOD RESULTS WITH

WIRTHMORE®

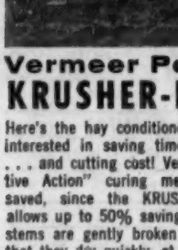
COMPLETE FEEDS & CONCENTRATES

Home Office:
Waltham, Mass.
Mills at:
Olean, N. Y.
Toledo, Ohio
Brattleboro, Vt.
St. Albans, Vt.
Concord, N. H.
Bridgewater, Mass.
Preston, Md.
Hickory, N. C.

Here's How to Get
"POSITIVE ACTION" CURING
WITHOUT SHATTERING

Vermeer Pow-R-Hay
KRUSHER-KRIMPER

Here's the hay conditioner you want if you're interested in saving time, getting better hay . . . and cutting cost! Vermeer's unique "Positive Action" curing means plenty of time saved, since the KRUSHER-KRIMPER action allows up to 50% savings in drying time. Hay stems are gently broken every 1½ inches so that they dry quickly, at the same rate as the leaves. The KRUSHER-KRIMPER helps you get cheaper beef gains and lower dairy feed costs, because you get richer, softer, more palatable protein-packed hay. Here's a hay conditioner that is built along simple mechanical lines, and priced lower to fit the budget of nearly all farmers. Yet is quality-built of the finest materials to provide years of trouble-free service.



Here's The Lower Priced QUALITY HAY CONDITIONER
Why Pay More?
Write for complete information, literature and low prices.

The "Action" both Crushes and Crimps

VERMEER MFG. CO.
1412 W. Washington • Pella, Iowa

DAISY Cattle Markers

Solid brass tags and brass-plated chain

No. 21—FOR NECK. Case-hardened chain. Tag numbered both sides. $13.25 per dozen delivered.
No. 17—FOR HORNS. Case-hardened chain. Tag numbered both sides. $9.20 per dozen delivered.
No. 23—DOUBLE PLATE NECK MARKER. Combination strap webbing and heavy chain, two marker plates. $14.50 per dozen delivered.
Write for catalog. Sample mailed for $1.00.
GOLDEN ARROW FARMS
Dept. C, P.O. Box 7 Huntington, Indiana

Master Saver Feeder

FOR HAY OR ENSILAGE
Model #15 15 Ft. Long $89.50
FREIGHT PREPAID

• PERMANENT
• ALL-METAL CONSTRUCTION
• CUTS YOUR FEED COST
• FEEDS 24 HEAD

Write for free illustrative folder
CENTRAL STATES SALES CO.
P. O. BOX 34220 DALLAS, TEXAS

When your mower clogs

(Continued from page 512)

physical conditions, and machine adjustments comprise 75 per cent of the total number of stops. These categories are under the direct control of the farmer.

Twenty-five per cent of the stops were credited to machine design. This is significant. It emphasizes that the present-day mower is at the limit of its effectiveness in heavy growths.

Every irregularity of growth characteristics, physical conditions of the field, and improper adjustments result in a clogged mower. These stops aggravate the operator who responds by doing a worse job as time becomes short and he wants to get something done.

A mower is not as sensitive in normal growths of grasses and legumes. Guards can be loose, out-of-line, ledgers worn, knives dull, and it will still mow. It will bounce over ditches, bumps, clods, and still keep going, although the job it performs is not ideal.

There is always a great time lapse between the proving of a cultural practice and the development of a practical machine designed to meet its requirements.

Difficulties can be minimized . .

During this time, however, we can minimize these mowing difficulties. Any mashing, running down, or turning on uncut grass should be avoided at all times. A clean-up operation should be done after removal of a cutting. All skippers, plugs, and clumps should be eliminated by immediate mowing. This will reduce the stops in the next cutting.

Cut hay early, before the lower portion of the grasses become yellow, dead, and rotted.

Perform all adjustments, care, and maintenance procedures according to the manufacturer's recommendations. **Read the operator's manual!**

Face-lifting your mower . . .

How extensive a face lifting does the mower need to improve performance? I recommend a control to tilt the guards that can be activated from the tractor seat; an inner shoe (head shield) which will allow passage of cut grass by the shoe without catching or hanging thereupon.

The outer shoe needs a device to push the uncut grass back into position and not let it hang out over the cleared track.

A sweeping device on the tip of the sickle to brush out the fine material under the guard lip, or a guard to eliminate this problem, would be helpful.

A small reel or directional device to propel the cut grass away from the cutter bar, I feel, would also improve performance.

Some of these improvements are already designed and being tried by various manufacturers.

Remember, three-fourths of the troubles are under your control.

Why don't you show that old mower of yours a little affection? Treat it to an over-all maintenance and promise it a fair shake when you take it into the field. Let's be proud of a mowing job well done. **THE END**

Teacher: "If your mother gave you a large apple and a small apple and told you to divide with your brother, which would you give him?"

Tommy: "Do you mean my little brother or my big brother?"

COMFORT Livestock Sprayer
Pat. No. 2,775,261; 2,822,184; Other Patents Pending
with Adjustable PENETRATING PRESSURE

As low as $72.65
Suggested List Price F.O.B. Factory

Quality Built, Effective Livestock Sprayer That Delivers a Fine, Micro-Mist or Powerful Jet Spray.

Designed for dairy and beef cattle, swine and other livestock, COMFORT Livestock Sprayers force the chemicals *through* and *under* the heaviest and slickest hair coating where insects cause trouble. Natural body heat slowly vaporizes chemicals back *up* and through the hair giving you long-lasting effectiveness *where it counts.*

COMFORT Livestock Sprayers are complete with all fittings, chemical resistant hose, pressure regulator and gauge, hand gun, Hypro pump.

Works Off Your Power Take Off. Fitting For Extra Hand Gun

Accurately covers orchard trees, fence rows, hard-to-reach spots, volunteer seedings, shrubs. Designed for years of rugged use.

COMFORT'S penetrating pressure helps thoroughly sanitize all nooks and "impossible to clean" cracks. Ideal for farm building sanitation . . . inside and out.

See the COMFORT S-99 High Pressure Livestock Sprayer or the Model S-98 Std. Pressure Model at your nearby COMFORT Dealer; or, write:

Ask Your Dealer About the Camel Back and Complete Line of multi-purpose trailer and tractor mount models, pre-emergence sprayers, combination and jet-type sprayers.

COMFORT EQUIPMENT CO.
Dept. DD
2609 Walnut St.
Kansas City, Mo.

INTRODUCING
the all new dual purpose
KOOLS K-40
CUTTER-BLOWER

DESIGNED ESPECIALLY TO CUT AND BLOW HIGH MOISTURE CROPS IN A SINGLE OPERATION

New Kools Cut-N-Blo unit with controlled cut has wide variety of uses including cutting and blowing high moisture ear corn (cob and all), cutting corn cobs for bedding or mulch, blowing grass and corn silage. No attachments to hook up or unhook . . . cuts and blows into silo in one operation.

for complete information . . .

KOOLS BROTHERS, INC.
APPLETON, WISCONSIN

New Low Cost
FORAGE MASTER
SELF-UNLOADING FORAGE BOX

Large Capacity - Top Quality More For Your Money

Cut your Crop Handling Costs with this new larger, efficient PTO operated self-unloading forage box. Extra large capacity and finest quality construction. 83 in. wide inside, 16 ft. long (including cross conveyor). 72-in. sides. (Also available in 2 beater model with 48 in. sides.) Write for further information on our full line of 1960 automatic crop handling boxes. They are the finest ever in design and quality, yet low in price. Get full details now.

- Big capacity . . . unloads one ton per minute.
- 3 Tubular Beaters and 3 speed unloading.
- Front unloading for convenient operator control and open front end design.
- Big 16-in. diameter auger — simple positive action. Also removable for trench style silos. Auger extension optional.

KASTEN MFG. CORP.
Department H.D.
Allenton, Wisconsin

FORAGE MASTER

I am interested in more information on the Forage Master Model 3-8-72 Self Unloader.

Name .....
Address .....
City ..... State .....

SPECIAL OPPORTUNITIES

— Where Buyer and Seller Meet —

The rate for advertising in this department is 35 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ##, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 6 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us one month ahead of date of issue. NEW ADVERTISER MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. Different rate for Livestock Display advertising.

STOCKMEN'S SUPPLIES

HORN WEIGHTS. Made in 4 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.75 postpaid. Includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY Co., Council Bluffs, Iowa. 4-*

ARTIFICIAL breeding equipment. Largest, most complete line. Write for free catalog. NASCO, Fort Atkinson, Wisconsin. 1-*

MASTITIS TESTERS. Send for free sample and literature. DAIRY EQUIPMENT COMPANY OF OHIO, INC., Pataskala, Ohio. 3-*

STUBBORN MASTITIS INFECTIONS? 1 dozen mastitis tubes, Streptopen with Cobalt $7.50. Pen-fo-mast (100,000 unit penicillin tubes) $3.50 a dozen. Procaine penicillin vials 3,000,000 units $4.75 a dozen. Postpaid. Check or money order. UNICORN PHARMACAL COMPANY, Inc., Dept. H-2, Grand Gorge, New York. 20-*

VET MEDICINES for dairy and livestock. Antibiotics, vaccines, sulfa drugs, equipment. Complete line at wholesale. Write for catalogue. EASTERN STATES SERUM COMPANY, 1727 Harden Street, Columbia, South Carolina. 23-*

VETERINARY SUPPLIES, mastitis ointments, penicillin, at greatly reduced prices. Free catalog. WESTERN LIVESTOCK SUPPLY, Delta, Colorado. 24-*

KILL SUBMERSED water weeds which foul up motor propellers, tangle fishing gear, with R-H Weed Rhap-20, Granular 2,4-D. Inexpensive, easy to use, sure results. For free information write REASOR-HILL CORPORATION, Box 36HD, Jacksonville, Arkansas. 1-12

KILL BITTERWEEDS, wild onions and dog fennel with R-H Weed Rhap. Low cost. Will not injure grass, grains; not poisonous. For free information write REASOR-HILL CORPORATION, Box 36HD, Jacksonville, Arkansas. 7-6

KILL BRUSH at low cost with amazing R-H Brush Rhap. Will not injure grasses, grains; not poisonous. For free information write REASOR-HILL CORPORATION, Box 36HD, Jacksonville, Arkansas. 1-12

ARTIFICIAL INSEMINATION equipment. World's leading supplier. Write for free catalog. INSEMIKIT COMPANY, INC., Baraboo, Wisconsin. 3-*

INJECTABLE PENICILLIN. Five 100-cc vials $10 postpaid. Specify Oil or Aqueous. Free price list. VET-AID, 5612 Knox South, Minneapolis 19, Minnesota. 7-3

MAIL ORDER FREE OFFER: Mastitis: 1 dozen 12 cc tubes free with every 2 dozen ordered. Masti-kure economy: Crystalline penicillin 100,000 units, Dihydrostreptomycin 150 mg., Neomycin Base 25mg., Sulfanilamide 500 mg., Chlorobutanol 50 mg., Cobalt Sulfate 10 mg., $4.95 per dozen 12 cc tubes. Injectables: Pfizer & Schering Combiotic, combination of penicillin and Dihydrostreptomycin 10 cc vial. 1 vial free with every 2 vials ordered. $.75 per vial. Orders $10 or over prepaid. Free merchants green stamps, premium books, stamp saving book and veterinary catalogue sent with each order. Free offer expires in 30 days. MASTI-KURE PRODUCTS COMPANY, North Franklin, Connecticut. 8-3

SPECIAL MASTITIS OINTMENT. (Procaine Penicillin 100,000 units. Dihydrostreptomycin 100 mg., 10% Sulfamerazine, Sulfathiazole Cobalt 5MG. in sesame oil base disposable syringe). Dozen $4.50 prepaid. New improved mastitis special with 12MG. Hydrocortisone Acetate $6.00 dozen. (Pen-Fz $9.00 dozen syringes). Quantity savings. KENSINGTON VETERINARY AND POULTRY SUPPLY, Kensington, Connecticut. 9-*

KILL FLIES like magic with this new discovery. Sample $1.00 Fly Cake, P.O. BOX 755, Cleveland 22, Ohio. 9-6

CATTLE MARKERS

ALL-NYLON—NO PAINT to chip out. Many colors. Free catalog. CREUTZBURG & SON, Wayne, Pennsylvania. 6-*

CATTLE TAGS, chains, straps, nylon rope sets. Anklets, rugged eartags legible 50 ft. Samples. Nearest dealer. BOCK'S, INC., Mattoon, Ill. 7-spl.

LARGEST, most complete line of cattle markers and livestock supplies. Free catalog. NASCO, Fort Atkinson, Wisconsin. 14-*

FREE illustrated price list world's finest cattle markers 50c each. Halters and other supplies. Save money. Write today. MAC-RA COMPANY, P.O. Box 1409-H, Santa Barbara, Cal. 7-*

DAISY CATTLE MARKERS, solid brass tag and brass-plated chain for horns or neck. Write for free catalog. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 10-*

E-Z REDD TAGS make identity fast and accurate. Colorful contrasting numbers, wear resistant plastic. Available with neck chain and fasteners. Write for free agricultural supply catalog from the world's leading source of artificial breeding equipment, breeding and show ring equipment, plus hundreds of other farm items. INSEMIKIT COMPANY, INC., Baraboo, Wis. 3-*

FARM EQUIPMENT

BARN HAY DRYERS: There's $45 to $60 added net profit per cow in mow dried hay. Heal's most efficient "Controlled Air" system lets you cut and crush young hay at 7-8 A.M., ready for barn at 1 P.M. This leafy, green hay tests 17-20% protein. Increases production, cuts concentrate costs, ups net profits. Easy harvest; rate unlimited; no bottlenecks. Write HEAL COMPANY, Box 156-H, Waukesha, Wisconsin.

SAVE 40%. Hydraulic manure loaders. VAUGHN MANUFACTURING, Wasecs, Minnesota. 4-*

FARM EQUIPMENT

BARN EQUIPMENT, barn cleaner, comfort stalls, stanchions, milking parlor stalls, windows. Guaranteed. Immediate shipment. STANDARD EQUIPMENT, INC., Dept. 3-C, Bel Air, Maryland. Phone 417. 8-*

ELECTRIC WELDERS: New, heavy-duty, 180 amp. Free trial. Dealerships open. 20 year warranty. $159 South Pleasant, DEPARTMENT L. Minneapolis 20, Minnesota. 2-24

DEPRESSION PRICES. We sell cheap. Save 75% off-new and used tractor parts, crawlers and wheel tractors, 190 makes and models. 1960 catalog ready. Send 25 cents refundable. SURPLUS TRACTOR PARTS CORPORATION, Fargo, North Dakota. 4-10

UNIVERSAL GATE KIT, new practical design, easily installed. Only $11.95. Free folder. WHITE INDUSTRIES, Orwell, Ohio. 8-2

DAIRY EQUIPMENT

SET TOOLS for 1-1/2 stainless steel pipeline milking equipment, like new, $125. HAYES, 647 South Pickwick, Springfield, Missouri.

FOR SALE: 48 Hudson Lever stanchions and stalls. Can be operated individually. Used six years. Price $700. Write: ALFRED HUSEMAN, Beecher, Illinois.

IRRIGATION EQUIPMENT

IRRIGATION—Auto Rain aluminum pipe, Gorman Rupp pumps, design service, low installed cost. MICHIGAN ORCHARD SUPPLY COMPANY, South Haven, Mich. Phone 252 6-*

SILOS

P & D SILO UNLOADERS handle hard packed and frozen silage. Large capacity. A boy can feed 100 head in 10 to 15 minutes. 30 days free trial on money back guarantee. Also heavy duty auger bunk feeders. Dealership available in some areas. P & D SALES COMPANY, Plainfield 6, Illinois. 20-*

SILO GLAZE. Silo walls crumbly? Spoilage near walls? Use DeMuth Penetrating Silo Glaze. Easily applied. Write today. FROBERG DISTRIBUTING CO., Valparaiso, Indiana. 5-8

BUSINESS OPPORTUNITIES

HAVE TWO INCOMES! Own a coin-metered, licensed, unattended Westinghouse Laundromat (R) Laundry Store and net an extra $5,000-$10,000 a year. This is just the ticket for farmers and ranchers. You can easily operate a Westinghouse Laundromat Store in your spare time without any of the usual headaches of a second business in town. Operate 24 hours a day, 7 days a week — without help! Because equipment is coin-metered, no attendants are necessary and little personal attention is required. You don't even need experience. We give you training, advice and continuing help. We even finance your equipment up to 90%. We have assisted in establishing over 10,000 successful laundry stores which serve farm, ranch and town families — hundreds in communities with populations under 1,000. This is your opportunity to have a second business and a second income with minimum investment. Take up the seasonal slack in your farm income while you forget weather worries and market prices. Write or call us today for details on this profitable, fascinating, new business. Offices in principal cities. ALD, INC., Dept. H., 7045 N. Western Avenue, Chicago 45, Illinois, ROgers Park 1-6500.

FARMS FOR SALE

SOUTHERN WISCONSIN dairy farms described and pictured in our catalog mailed to you free. Over 150 farms, many with low down payments, from 3 acres to 770 acres. 181 day growing season, exceptional corn production and ample rainfall, in this area. Write today for your free copy. LOGANWAY, INC., Southern Wisconsin's Leading Farm Brokers, Fort Atkinson, Wisconsin. 12-*

FOR SALE OR LEASE: 150-acre Grade A dairy, with or without 135 head cattle and full line of machinery. Base 2500 lbs. daily. Two dwellings. $20,000 down on complete operation. Liberal terms. LEROY HASENYAGER, Darrington, Washington. 8-2

NORTHWESTERN ARKANSAS big little dairy farm $15,000 plus gross sales. One man operation. Grade A bulk tank, pipeline. Holsteins 12,000 lb. herd average. Good machinery. Lots of buildings, pasture and water. Mild climate. Nice modern home, beautifully located. $53,000. ROBERT NEALY, Route 2, Rogers.

FLORIDA DAIRY FARM, 317 acres, 100 milk cows and 25 heifers, 221 gallons per day milk base. 57c per gallon. 12 stanchion milk barn, pipeline system, 600-gallon bulk tank, 3 storage barns, 3 houses, 10-acre lake, 1 tractor, pickup truck, hay baler, rake, mowers, discs, plows, planters, cultivators, etc. 3 miles west of Marianna on U. S. 90. Price $85,000. BILL-O-LARK FARMS, Rural Route 4, Box 325, Marianna, Florida.

FREE FARM CATALOG picturing and describing farms listed throughout Southern Wisconsin. Your copy is ready. Write today. LOGANWAY, INC., Fort Atkinson, Wis. 5-*

ALABAMA Blackbelt cloverland dairies, no snows, twelve months grazing. $6.33 milk, write us your requirements. ERNEST F. RANDALL, Realtor, Box 368, Selma, Alabama 19-spl

FARMS FOR SALE

VIRGINIA livestock, dairy farms and country estates. P. M. BROWNING, Realtor, John H. Hitt, Associate, Culpeper, Virginia. 13-*

GOOD SOUND WISCONSIN farms. Pfister Farm Agency, BERT PFISTER, Mt. Horeb, Wisconsin. 15-*

FLORIDA—dairy farms. Write BUD STOFFEL, C. Watkins, Realtor, 1227 E. Colonial, Orlando, Florida. 5-spl.

LARGE CENTRALLY LOCATED dairy farm, 25 miles South of Nashville, 12 miles East of Franklin, 653 acres watered by Harpeth River on one side and everlasting creek on the other, 12-room dwelling with two baths, gas heat and a four acre fishing lake, two tenant houses, plenty of barns, 5.88 tobacco base, new parlor type dairy barn, two new silos. Can be shown by appointment at $335 per acre. ROBERTS REAL ESTATE AND INSURANCE, Realtors, 509 2nd Avenue, North, Lewisburg, Tennessee. Phone day EL-9-4575, night EL-9-3380. 7-*

227 ACRES, Grade A, modern dairy and grain farm, 60 miles southwest of Chicago, 215 acres tillable, 2 modern houses, 52 stanchion barn with cleaner, hay barn and cattle shed, 2 large silos, 2 corn cribs, 2-car garage, machine shed, good roads. Must be seen to appreciate. Price $400 per acre. ALFRED WALKER, Mason, Illinois, Grundy Co.

UNITED'S SUMMER CATALOG! 160 pages! Over 900 photos! Best buys from coast to coast: ranches, farms, retirement homes, recreational acreage, businesses. Our 35th year! Send for free copy! UNITED FARM AGENCY, 1304-HD Consumers Bldg., 220 So. State St., Chicago 4, Illinois.

SOUTHERN ALABAMA — $300,000 dairy and tung oil tree operation with terms. Special milk market for all milk. Golden Guernsey registered herd from Northern Michigan. $6.00 per hundred weight — over 200 cows — could build higher. Modern herringbone setup. High tung crop income also. Many extras. 2,000 acres crop land out of 2,500 acres. PLANTATION SERVICES, Henry M. Goodyear, Jr., Realtor, 504 N. Slappey Drive, Albany, Georgia.

188-ACRE dairy farm, Central Piedmont South Carolina, 80 cows, excellent land, good equipment and building. Owner has operated this farm over 20 years, retirement reason for sale. BOX 452, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

480-ACRE Platte Valley irrigated grade A dairy farm. Three miles from Central City, Nebraska on oiled highway. ELMER BEERHOOP, Central City, Nebraska.

BEAUTIFUL BLACKBELT FARMS. All sizes. WINSLETT REALTY COMPANY, Marion, Alabama. 9-spl.

FARMS FOR RENT

300-400 ACRES top Northern Illinois land, buildings. 60-75 cows, pipeline, glass silo. Extra house. 50-50 for 1961. BOX 454, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

FARMS WANTED

MORE DAIRY FARMS needed to sell. Extreme Northern Illinois, Southern Wisconsin. H. E. GILBERT, Realtor & Associates, Elkhorn, Wisconsin. (Over 20 years successful experience at your service.) 5-*

LARGE DAIRY FARM wanted in Southern U.S. Must be fully equipped with cattle, machinery and milk contract. State price, down payment, and full particulars in first letter to HAWLEY FARMS, Maitland, Ontario, Canada.

POSITIONS WANTED

RELIABLE CATTLEMAN with proven ability would like to contact owner, would invest, capable of assuming full responsibility. BOX 456, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HELP WANTED

WANTED: Experienced artificial breeding technicians. Through our frozen semen program and freezers, areas may be developed in any state. References required. Write PIPER BROTHERS FARMS, Watertown, Wisconsin for details.

HERDSMAN. Good Opportunity. Ayrshires. GREENBANK FARMS, Hopewell, Va. 8-2

WANTED: Married man preferred, for large Guernsey herd in Northwestern Ohio. Pleasant working conditions, modern equipment, good modern house and extras. Must be sober and reliable; a good cowman and milker. State experiences, qualifications and references in first letter. RONALD FARNHAM, Al-phine Farms, Edgerton, Ohio. Phone CV-6-4865. 9-2

WANTED: Experienced, married dairyman for Lake County, Illinois, purebred Holstein herd. References required. Permanent. State age, family size, and telephone number. Modern housing. Excellent opportunity for advancement. Reply: BOX 455, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED: 4 milkers for our new milking unit. Ultra-modern loose housing and milking parlor. Prefer married men. Exceptionally good schools, churches and living conditions. No field work. GREEN MEADOW FARMS, Elsie, Michigan. 9-2

MARRIED MAN for modern 100-cow dairy farm near Flint, Michigan. Starting wages $275 per month with raises to $325 within one year. Opportunity to share in profits after one year. Sixty-hour work week with overtime pay, vacation, house, beef, and milk furnished. Write experience and qualifications. No phone or personal calls without a letter first. GEORGE BURROUGHS, 1422 West Cook Road, Grand Blanc, Michigan.

LARGE CALIFORNIA DAIRY needs a man that has knowledge of livestock and dairy know how. He must be acquainted with Artificial Insemination and cattle diseases. If we can find the right man, the pay will be $350 a month plus house and utilities. Write: BOX 451, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HELP WANTED

WANTED: Married man interested in working with Guernsey herd near Chicago. Must be good milker. Excellent 3-bedroom home furnished. ROSEWOOD FARMS, 25W 413 Central Avenue, Roselle, Illinois.

WANTED: Herdsman and dairy farmer, married, take over Holstein and Guernsey farm in Southern Michigan on share basis. Modern house, school bus. BOX 448, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 8-2

OPPORTUNITIES for men who want steady employment on a large certified milk farm. Paid vacations, sick benefits. Write for information. We want sober and reliable men. WALKER GORDON LABORATORY COMPANY, Plainsboro, N. J. 9-spl.

SOUTH-CENTRAL FLORIDA, married, working herdsman, under age 35. 600 grade milking cows. Alert, clean working habits, sober. Modern dairy, new 3-bedroom house. Starting salary $400. BOX 455, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

EXPERIENCED married dairyman for productive herd. Registered Holsteins. Farm experience necessary. GLENN HOLMES, Kankakee, Illinois, Route 4.

WANTED: Married man to milk up to 50 cows. No field work. Age no handicap. Must be good or don't answer this ad. BILL JENKINS, Knoxville, Iowa.

HELP WANTED—WOMEN

WANTED: Capable, industrious farm woman between ages 30 and 45, single or widowed, to help manage lovely modern Holstein dairy farm in Washington state. Write to: JOE ROTHLIN, Raymond, Washington.

AGENTS WANTED

WANT TO MAKE $30 or more in a day for part or full time route work? Man or woman. Write McNESS CO., Freeport 22C, Illinois.

SWINE

WISCONSIN FEEDER PIGS for sale. 40 to 50 lbs., castrated, all top slick pigs. Delivered direct. 5 day guarantee. C. AKER, Middleton, Wisconsin. TE-6-3451. 9-*

DOGS

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

SHEPHERDS, COLLIES. Outstanding Heelers, Watch Dogs. ZIMMERMAN FARMS, Flanagan, Illinois. 2-*

POULTRY—BABY CHICKS—DUCKS

ROCKS, REDS, Leghorns, 60 breeds. $5.99 to $8.99; Pullets, $11.99 to $20.99; assorted, $1.49 to $5.99. Heavies, included, catalogs. BUSH HATCHERY, Clinton, Missouri. 9-2

AUCTIONEER SCHOOLS

LEARN AUCTIONEERING, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

LEARN AUCTIONEERING. Free catalog! MISSOURI AUCTION SCHOOL, Box 9252D4, Kansas City, Missouri. 19-*

HAY AND BEDDING

GRADED DAIRY ALFALFA and other grades hay. ART CALLARI HAY COMPANY, Upper Sandusky, Ohio. 20-*

SEEDS AND PLANTS

STRAWBERRY PLANTS — Certified northern grown Dunlap, Blakemore, Giant Robinson, Premier, Armore 200-$2.75; 500-$6.25; 1000-$10.50. Postpaid. 5000-$37.50 express collect. Giant Gem, Streamliner, Superfection everbearing 100-$2.50; 300-$6.50. 20 Mammoth rhubarb or 40 asparagus $1.00. Gladiolus-large flowering, rainbow mixture 50-$1.00. Everything postpaid. Fresh plants, prompt shipment. IOWA NURSERY, Farmington, Ia. 8-2

CERTIFIED PLANTS: Pay on arrival. Frostproof cabbage, onions, tomatoes, pepper, broccoli, brussels sprouts, collards, cauliflower, sweet potatoes, 200, $1.50; 500, $2.50; 700, $3.00; 1,000, $3.50; 5,000, $15.25. Transplanted plants, 100, $1.50; 500, $5.00; 1,000 $9.00. Leading varieties, mixed as wanted, moss-packed. TEXAS PLANT FARMS, Jacksonville, Texas. 9-2

500 ASSORTED SWEET onion plants $2 postpaid fresh from TEXAS PLANT COMPANY, Farmersville, Texas "home of the sweet onion." 8-2

OF INTEREST TO WOMEN

AVERAGE $2.00 HOUR sparetime, assembling our lamps. Simple. Easy. No canvassing. Write: OUGOR, Caldwell 24, Arkansas. 4-*

$2.00 HOURLY possible sewing our ready cut aprons at home. Spare or full time. Experience unnecessary. Write A & B ENTERPRISES, Caldwell 17, Arkansas. 6-*

SUITINGS — buy direct — 3½ yards — 60 wide. Finest rayon-dacron flannels, gabardines. Crease-resistant, washable, rich colors. Save! Samples 10c. KROONA FABRICS, 2005-HDS Taylor, Minneapolis 18, Minnesota. 8-2

HAVE A PROFITABLE HOBBY sewing aprons, children's wear. Details free. REDIKUT'S, Loganville 15, Wisconsin. 9-spl.

MORE SPECIAL OPPORTUNITIES ON NEXT PAGE

C. J. Krumm named to manage NYABC

Charles J. Krumm, operations manager of Tri-State Breeders' Cooperative, Westby, Wis., has been appointed manager of New York Artificial Breeders' Cooperative, Ithaca, N. Y., the world's largest member-owned dairy cattle artificial breeding organization.

Krumm will assume his new duties with the 47,000-member group July 1. He replaces Maurice W. Johnson, who has been NYABC manager since the New York and western Vermont association was organized in 1940. Johnson indicated last fall that he would retire effective this summer in order to operate his own 160-acre dairy farm located at Auburn.

In January 1951 Krumm became the first manager of the Southern Wisconsin Breeders' Cooperative, a dairy cattle breeding association which grew under his management from 24,000 cows in two counties to 113,000 cows in ten counties at the time of its merger January 1, 1960 with Tri-State Breeders'.

Tri-State Breeders' Cooperative, of which Krumm is presently operations manager, has 30,000 members in 27 western Wisconsin, Minnesota, and Iowa counties. Its 130 technicians are providing centralized service for 400,000 cows.

In 1957, Krumm was elected to a three-year term as director of the National Association of Artificial Breeders. In 1958, he was named as vice-president of the national group, and re-elected to that position in the current year.

Jessup and Bluffview merge in West

Two privately-owned artificial breeding services in the West have merged. The Bluffview Artificial Insemination Service of New Plymouth, Ida., has merged with Jessup Breeders of Artesia, Calif.

The new organization plans to service seven western states.

Plans call for the Bluffview bull battery to be moved to the stud facilities at Glendale, Calif. There all semen will be processed and shipped into the Northwest with use of liquid nitrogen equipment.

Lloyd Johnson, owner of Bluffview, will continue to operate his service as a distributor of Jessup.

It is expected the organization will breed 90,000 cows this year.

Sales Announcements

May 10, 1960—Brown Swiss — Farm Alverne Dispersal, Mr. & Mrs. Wm. G. Fisher, owners. 11:00 A.M. at the farm 2 miles N.W. of Prior Lake, Minnesota (26 miles S.W. of the Twin Cities), 77 head. Sale under the management of Norman E. Magnussen, Brown Swiss Sales, Lake Mills, Wisconsin.

May 16, 1960—Holsteins — Herbert Zepp dispersal, Beaver Dam, Wisconsin. Sale at the farm located 6 miles southeast of Beaver Dam on Co. trunk G. 11:00 A.M. 60 head. Francis Darcey and Sons, Sale Managers, Watertown, Wisconsin.

May 17, 1960—Holsteins — 70 head of Registered and Grade Holsteins will sell at the Darcey Sales Arena at Watertown, Wisconsin. These are select cattle picked from some of Wisconsin's better herds. Francis Darcey and Sons, Sale Managers, Watertown, Wisconsin.

May 23, 1960 — Ayrshires — Canadian National Sale, Huntingdon, Quebec, Canada. 20 miles north of Malone, New York. For catalogues write: Ayrshire Breeders' Association of Canada, 1160 Carling Avenue, Ottawa 3, Ontario.

May 28, 1960 — Ayrshires—First sale. Strathglass farm dispersal, Port Chester, New York. 10:30 A.M. Sales Manager, Granger Sales Company, Thompsonville, Connecticut. For catalog write Sales Manager or Strathglass Farm.

July 23, 1960 — Ayrshires—Second sale. Strathglass farm dispersal, Port Chester, New York. 10:30 A.M. Sales Manager, Granger Sales Company, Thompsonville, Connecticut. For catalog write Sales Manager or Strathglass Farm.

July 27, 1960 — Guernseys — Crestwood Farm registered Guernsey dispersal. For catalog write Carl E. Kehret, Streverling Guernsey Dairy, Austin, Minnesota.

MISCELLANEOUS

GAME FISH, many varieties for stocking ponds and lakes. Live delivery guaranteed. Thousands of satisfied customers. Profit possibilities. Rush 3 dimes for pond management booklet. Price list. LAKE MARGUS FISHERIES, Dept. HD, Penn Run, Penns. 6-*

HORSE, SHEEP, barber clipper blades expertly ground $1.50 set. Send now or write for shipping labels. BUCYRUS GRINDING COMPANY, Box 1065B, Bucyrus, Ohio. 9-spl.

SEPTIC TANKS, Cesspools, outdoor toilets. Keep clean and odorless with Northel Septic Tank Reactivator. Bacterial concentrate breaks up solids and grease — prevents overflow, back-up, odors. Regular use saves costly pumping or digging. Simply mix dry powder in water — flush down toilet. Non-poisonous, non-caustic. Six months supply only $2.95, postpaid (money-back guarantee of satisfaction), or rush postcard for free details. NORTHEL, HW-5, Box 1103, Minneapolis 40, Minnesota.

THANK YOU! Oversold on Neat Teat (R) udder sponges since August ad. Now expanded; ready for more business. Fabulous new material! Super strong, velvet soft. Resists chemicals, sterilizing. Won't mildew, crumble, scur. Handy foot square. $1.00 (four). Money back guarantee. Distributors invited. Joan Boyle, THE PLASTIC FARM COMPANY, P. O. Box 554, Ridgewood, New Jersey. Useful household sponge, too!

HOW TO TRAP SPARROWS with elevator traps. Information every farmer should have. No obligation. It's free. Write SPARROWTRAPS-605, Detroit Lakes, Minnesota. 9-4

DAIRY CATTLE

KENYON BROTHERS FARM serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls, T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone SHerwood 1-1818. 19-*

HIGH QUALITY Holstein and Guernsey springers and heifers all sizes. J. W. & BILL GEURKINK, telephone 322 or 21F31, Baldwin, Wisconsin. 15-*

BUY YOUR VACCIHATED dairy cows and heifers direct from the farmers where quality prevails. GEO. E. SWANSON, Rice Lake, Wisconsin. Phone 944R. 2-23

KEATING BROTHERS FARM offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone JOrdan 3-5905. 18-*

WISCONSIN HOLSTEINS for the Southern states. Heifers and cows on hand at all times, originating from the best producing herds in Southern Wisconsin. Artificial breeding, Bang's and T.B. tested for any state. Call P. R. ELAM, Marshall, North Carolina, phone 3451, or Mars Hill, North Carolina, 2381 nights. 23-*

REGISTERED HOLSTEINS: A few service age bulls, some younger males, foundation females and heifers. Nearly all sired by excellent sires and from classified dams with HIR records. SunMarGiale FARMS, Box 265, Lebanon, Ohio. Phone 5-2606. 22-*

HOLSTEIN cows and heifers with production, type and size from our foundation Wisconsin herds. Artificial breeding, calfhood vaccinated, Bang's and T.B. tested. PIPER BROS., Watertown, Wisconsin. Telephone 2170. 6-*

WE ARE NOW READY to fill your orders for Holstein and Guernsey cows and heifers. Shipped direct from farmer to you on commission basis. CHET BURNSTAD & SON, Tomah, Wisconsin. Phone Tomah 406-M or 752-R-12. 16-*

DAIRY CATTLE SALES, every Thursday, April through October. Top springer cows and heifers, 400 to 600 head every sale. MATTES LIVESTOCK MARKET, Thorp, Wis. 10-*

BRED WISCONSIN Holstein heifers. Will freshen May, June. Calfhood vaccinated. CHARLES KELLY, Onawa, Iowa. 8-2

TOP QUALITY HOLSTEIN springing cows and first calf heifers. Heifers for early fall freshening. We also ship on orders. Write: ELGAS BROTHERS, Jefferson, Wisconsin. 6-4

CANADIAN HOLSTEINS, registered, T.B. and Bang's certified, from R.O.P. herds. J. M. GILCHRIST, Wellington Co. Sales Agent, Route 5, Guelph, Ontario. 15-spl.

ATTENTION SOUTHERN DAIRYMAN! International Dairy Livestock Sales can supply you with all breeds of select dairy cattle from Canada and the Northern States. Nobody undersells International for price or quality. We have only satisfied customers because all cattle are guaranteed to be sound. Write Bob Carley or Tom Rossin c/o INTERNATIONAL DAIRY SALES, Box 1461, West Palm Beach or phone collect OVerland 3-1592. 5-spl.

HOLSTEIN HEIFERS, springing first calf heifers and young cows. Excellent quality. Write or telephone for prices and details. WALTER McFARLAND, Watertown, Wisconsin. Telephone 840. 21-spl.

CHOICE HOLSTEIN cows and heifers, all ages. Vaccinated. T.B. free. Fieldman available, or will fill orders as directed. Whitewater Dairy Association, DEAN HARNDEN, Whitewater, Wisconsin. Phone Palmyra 258. 1-*

DAIRY HEIFERS, all sizes. Top quality heifers that will develop into top cows. JIMMY AKIN DAIRY CATTLE, Brentwood, Tennessee. Phone Nashville VE 3-0605. 24-*

CANADIAN HOLSTEINS direct from the farms. Registered, T.B. and Bang's certified. MIDDLESEX HOLSTEIN BREEDERS ASSOCIATION. Phone Lambeth OL 3-2616, Hardy Shore, Glanworth, Ontario. 15-*

WISCONSIN DAIRY CATTLE, Holsteins. Springing cows and first calf heifers. Heifers for early fall freshening, also open heifers any size. We have drivers available to buy direct from farmers, or will fill orders at your direction. CONNERING BROS., Livestock, Route 1, Kaukauna, Wisconsin. Phone Little Chute ST-3-3332. 7-12

ATTENTION-DAIRYMAN. Attend Wisconsin's largest dairy auction. Selling all classes of dairy cattle every Wednesday. Also order, buy, and deliver. Central Wisconsin Livestock Auction, Tomah, Wisconsin. For further information call or write JERRY RANDALL, Augusta, Wisconsin. 5-12

FOR SALE: Holstein springing heifers and cows. Good selection of open and bred heifers. R. B. BRICHER, St. Charles, Illinois. Phone JU-4-2367 days, JU-4-2895 nights. 3-24

DAIRY CATTLE

100 HEAD of vaccinated Holstein heifers at all times. Weight 400 to 600 lbs. HERBERT F. SCHISEL, Valders, Wisconsin. Phone 45F2.

BUY YOUR QUALITY dairy cows and heifers direct from farmers. Calfhood vaccinated. LEONARD ANDERSON, Barron, Wisconsin. 9-12

NEW LOADS WEEKLY from Shores' Wisconsin Association herds. Special truck load prices $200 up. Bang's, Lepto, Shipping vaccinated. Delivered. Travel expenses refunded. Premiums. HAROLD SHORES, Neligh, Nebraska, TU 7-4060. TU 7-4850. 9-*

REGISTERED Holstein and Ayrshire cows and heifers, Bang's certified herds. PEARSON BROS., Waterdown, Ontario, Canada. 13-spl.

HOLSTEIN COWS and springer heifers with size and production. Bought directly from leading herds. Sold at low overhead prices. We fill orders, before you buy contact us. DEAN YODER, Danvers, Illinois. Phone Yorktown 3-4774. 5-spl.

REGISTERED HOLSTEIN heifers and calves. W. STRAUSS, Watertown, Wisconsin.

I HAVE MOST all breeds choice dairy heifers. Bred and heavy springers. Mountain grown are best. Will deliver. A. L. KELTNER, Greeley, Colorado. 17-spl.

CANADIAN Registered Holsteins. Young vaccinated cows and heifers. Buy direct from the farms. Elgin County Holstein Breeders Club. Telephone Talbotville, Ontario 6-R-12. DON SHORE, R.R. #6, St. Thomas, Ontario, Canada. 7-*

LIVESTOCK DISPLAY ADVERTISING RATES

COPY MUST REACH US ONE MONTH BEFORE ISSUE DATE

Per column inch, each insertion

CLASS 1 — $15.00

For advertising of consignment, dispersal or reduction sales; breeders herds and individual animals.

ALL OTHERS WRITE FOR RATES

Including dealers, county, state and national breed associations, artificial breeding associations, semen sale ads, fairs, expositions, etc.

SPECIAL RATES FOR CONTINUOUS AND LARGE SPACE ADVERTISERS

SPECIALIZING IN QUALITY QUANTITY & SERVICE

Badger Breeders Cattle Sales Division selling registered and grade cattle of all ages

CONTACT

BADGER BREEDERS CATTLE SALES DIVISION

PHONE 677 SHAWANO, WISCONSIN

PIPER BROS. FARMS, INC.

ARTIFICIAL BREEDING SERVICE

FEATURING

Proven & Highly Classified Sires

INCLUDING ALL-AMERICANS

Now available in many areas of the Nation as well as Wisconsin

THESE BREEDS

HOLSTEIN *BROWN SWISS*

GUERNSEY *JERSEY*

ANGUS - HEREFORD

BULL STUD AND HERD LOCATED AT WATERTOWN, WISCONSIN

WISCONSIN DAIRY CATTLE

Midwestern Dairymen ! ! !

Fine foundation **SPRINGING** heifers, yearlings, cattle of all ages. These are sold on commission basis to you. We have buyers throughout the northern dairy states and can supply the finest for the best possible price. One of the midwest's largest dealers serving dairymen for the past 8 years. We will deliver C.O.D. to your farm by our experienced drivers. We are moving 300-500 head per week.

DENNIS R. GROSSE

PHONE 1419 YORK, NEBRASKA BOX 48

AYRSHIRES

AYRSHIRES

THESE 8 AYRSHIRES IN ONE HERD MADE

1,054,346 lbs. 4.3% milk Actual, milked only twice daily.

THIS IS AN ACTUAL AVERAGE OF 12,553 LBS. MILK, 534 LBS. FAT PER COW PER YEAR. Their average age is 12 YEARS AND STILL PRODUCING. This is proof that Ayrshires give you extra years of profitable production and extra income from registered calves. Your opportunities for National leadership with Ayrshires are unexcelled.

Write: AYRSHIRE BREEDERS' ASS'N., 10 Center St., Brandon, Vt.

Strathglass Farm AYRSHIRE SALE

90 Head of Registered Young Ayrshires

At Auction 10:30 A. M. (E.D.T.) PORT CHESTER, N. Y. **May 28, 1960**

This is the FIRST of two auctions in the Complete Dispersal of the famous Strathglass farm herd of pedigreed Ayrshires that was established 40 years ago.

80 Head of bred and open heifers, and heifer calves.

11 Head of young bulls and bull calves. (Every young bull offered is by an imported bull or out of an imported dam.)

Strathglass Farm has owned more 100,000 pound milk producers, more Approved dams, and more "Excellent" cows, than has any Ayrshire herd. You can now select a wealth of superior young cattle from this herd that has held an unmatched position in the dairy cattle world for nearly a half century.

SOME OF THE SALE HEADLINERS:

35	Junior and Senior heifer calves. All by imported Scottish sires.	10	From Approved Dams.
		15	From "Excellent" dams.
29	Junior and Senior yearlings—12 by Approved Sires.	7	Young bulls from 100,000 pound Approved dams.
2	Junior Champion females from the 1959 Major Show Circuit.	Many Produce-of-dam and Get-of-Sire combinations.	
13	With 100,000 pound milk producer dams.	Many are right for the 2-yr.-old classes this year.	

The chance of a life-time to buy one, or a whole foundation, of the best Ayrshire breeding. Herd Accredited and Certified, and calf-hood vaccinated.

FOR CATALOG:

GRANGER SALE CO., E. M. Granger, Jr., Mgr., Thompsonville, Conn.

or STRATHGLASS FARM, Port Chester, N. Y.

IMPORTANT NOTE: Final Sale, Sat. July 23, 1960. Cows, Bred Heifers, and Bulls.

NOW YOU CAN BUY

POLLED AYRSHIRE BULL CALVES

That are from high producing families
That are of Carefree Farms & Penshurst Breeding
That give you excellent type calves
That are priced at prices sure to please

WRITE FOR PEDIGREES AND PRICES
CAREFREE FARMS NEW HAVEN, INDIANA

IMPROVE YOUR DAIRY HERD

Three of our registered Ayrshires are calving soon. Take a bull calf, use him until 3 years old FREE. Write: CORKWELL and WEIMER, Mt Sterling, Ohio.

CANADIAN NATIONAL

AYRSHIRE SALE

MONDAY, MAY 23

HUNTINGDON, QUEBEC, CANADA
(20 miles north of Malone, N.Y.)

Featuring Canada's Best with consignments from the U.S. and Scotland

1 BULL—His dam is the World's Record 2X 2 yr. old butterfat producer—2 yrs. 17,385 717 4.12 2x-305 days. 6 YOUNG COWS—4 Ex.; 2 V.G.7 — 3 & 4 YR. OLDS—Their dams have 46 records that average: 10,514-M; 418-F; 302 days (Actual). 21 BRED HEIFERS—Their dams have 143 records that average: 10,767-M; 444-F; 4.12% in 312 days (Actual). The dams of 6 are 100,000 lb. producers.

FOR CATALOGUES WRITE:
Ayrshire Breeders' Association of Canada
1160 Carling Avenue, Ottawa 3, Ontario

BROWN SWISS

PROFIT MORE *with* BROWN SWISS

Brown Swiss have built their own popularity. Their consistent, profitable production over many years makes them the choice of better dairy farmers everywhere.
The market for Brown Swiss Cattle is strong, and surplus cattle sold to go into other herds bring uniformly good prices. Because of their size, their strength, their ruggedness and their ability to efficiently utilize pasture and coarse roughage, you will find Brown Swiss well adapted to your dairy farm conditions. They are truly the "Farmers Cow." Buy a foundation and you'll soon have a herd.

For more information about the breed write:
BROWN SWISS ASSOCIATION, Beloit, Wis.

HYCREST FARMS
P.O. BOX 368 LEOMINSTER, MASS.
HOME OF:
242 classified animals that average 84.4% 216 tested cows that average 575 lbs. fat (305-2X-ME)
SPECIALIZING IN SPECIAL BULLS FOR SPECIAL RESULTS.

OUTSTANDING BROWN SWISS HERD SIRE PROSPECTS

Sons of excellent cows, four with excellent mammaries and records to 881 fat. Most of the bulls now available are by Norvic Master Infielder. Our thirteen classified cows average 86.2 with 5 excellent, 5 very good and 3 good plus and have 2 DHIA herd averages of 11,357 milk 4.4% 504 fat. Write or visit for pedigree and price. UNIVERSITY OF NEBRASKA DAIRY DEPARTMENT, LINCOLN, NEBRASKA.

JERSEYS

I have choice high grade bred Jersey and Guernsey heifers, also fresh and springer cows. All T.B. and Bang's tested. Come and make your selection, or will fill your order or help you buy. Phone University 5-6113. CLAUDE THORNTON, Route 2, Box 256, Springfield, Mo.

Use Your Telephone

TO EARN EXTRA MONEY

Sell HOARD'S DAIRYMAN

to Neighboring Dairy Farmers

WRITE TO
CIRCULATION MANAGER
Fort Atkinson, Wis.

GOLDEN SUNSET JERSEYS—How would you like to have a herd sire whose sire's 3 nearest dams have records ave. 13,820# m., 787# f. And the 3 nearest dams to his dam's sire have record ave. 13,666# m. 757# f. Very reasonable. THE ENNIS JERSEY HERDS, Festus, Missouri.

Brigham Jerseys

ARE YOU BEING PUSHED FOR A HIGHER SOLIDS MILK?

Many Are Turning To Jerseys
The Breed With The Highest Milk Solids

BUY HEIFERS

We offer a fine lot of Heifers backed by eight and nine generations bred, developed and tested right here on the farm. You're assured of more for your money.

WRITE FOR HEIFER LIST

BRIGHAM FARM ST. ALBANS, VERMONT

GUERNSEYS

FOR SALE

Purebred Guernsey heifers all ages. Several due in May. From high record cows and strong cow families. Also yearling bull — highest records three nearest dams average 19541M-972F.

TARBELL GUERNSEY FARMS
SMITHVILLE FLATS, NEW YORK

GUERNSEY SALES SERVICE

Six fieldmen of the largest Guernsey Association in the Nation are fully acquainted with cattle for sale in Penna., Delaware and Eastern States. We have private listings at all times, also regular monthly sales. If you need one or a car load, write for prices—get quick service. If you want to sell, contact us—low selling charge—prompt payment.

Pennsylvania Guernsey Breeders' Association
BOX 491 HARRISBURG, PENNA.

GUERNSEYS

Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. Lee Burlingham, fieldman, at your service. Waukesha County Guernsey Breeders' Assn., Waukesha, Wisconsin.

GRANDVU GUERNSEYS — Choice young bulls and heifers, all ages. Blue Ribbon Type, size, production breeding. From 2 great Proved high index sires. Flying Horse Masters Royal, Greenfield Music Maker. Foundation Club Calves. The right kind at the right price. Write or come to Grandvu Farms, Wrightstown, Wis.

JEFFERSON COUNTY GUERNSEY BREEDERS ASSOCIATION—Guernseys—registered and grade females, all ages. Also bulls. Free service to buyers. Write or phone: William Erdman, Route 1, Fort Atkinson, Wisconsin, JOrdan 3-5731.

Do You Need A Guernsey Sire?

Now is the time to check our list of typy, well bred bull calves. If you want production and good type, we can help you. Our bloodlines are famous from coast to coast. Youngsters priced to sell. Come in and see our herd when you are in Wisconsin. Send for price list.

HOARD'S DAIRYMAN FARM
FORT ATKINSON, WISCONSIN

HOLSTEINS GUERNSEYS

Large selection of high grade cows and heifers of all ages. Calfhood vaccinated — lab. tested. We feed well balanced roughage for top production and size. Buy direct and save. Experienced insured transportation.

LAKESIDE DAIRY FARMS
Quality Cattle Since 1929
Silver Lake, Indiana Telephone 3801-3804

FRITZLYN JEANETTE'S FLASH

Dams. ave. 12897# m., and 647# fat, 305d. 2x, and 87 type score. Flash sons for sale, out of dams with 9000 to 13400# milk, and 400 to 640# fat, 305d. 2x-HIR, with 82 to 88 type score. Registered females for sale.

THREE CLIFFS FARM
DON FORNER CHASKA, MINN.

A BULL OF YOUR OWN

FOR UNIFORMITY IN YOUR HERD. Select a good typy young bull sired by one of our fine quality sires—Sanfadair F. Prediction or Sanfadair L. Princton, or Fairlawn K. Princeton. They will add quality to your herd and they are priced right. See them at the farm. Highway #96—between Stillwater and White Bear Lake, Minn.

SANITARY FARM DAIRIES, INC.
415 Grove St. St. Paul 1, Minn.

Is your subscription running out? Renew now! Five full years only $3.

FREE Facts on REGISTERED GUERNSEYS

Best Choice for Highest Net Income

Adaptable, efficient Guernseys earn highest net income. Here are some of the reasons:

- Guernseys are the earliest maturing breed, bringing you profits sooner and returning higher lifetime income.
- Guernsey milk is always in demand by distributors. There's no finer milk than Guernsey, with its appetizing golden color and delicious flavor . . . and its higher total solids — more protein, vitamins and minerals — assures consumer acceptance. Remember distributors pay producers on the basis of total solids — not on pounds of milk alone.
- Guernseys are easily handled.
- Guernseys excel in efficiently converting grain and roughage into milk.
- Guernseys fit todays modern dairying methods . . . This means more efficient use of labor, feed, and space in the barn and at the feed rack. Add all this to Guernsey's early maturity and high lifetime production of the finest milk . . . and you'll find the breed that gives highest dairy profits.

Start Your Registered Guernsey Herd Now!

FREE FACTS, write today

THE AMERICAN GUERNSEY CATTLE CLUB
823 Main Street, Peterborough, N. H.

☐ Send FREE information on how to start a Guernsey Herd, and a copy of "Profitable Dairying."

☐ Send FREE information about extra profits selling nationally advertised Golden Guernsey Milk.

Name .....
Address .....
Town ..... State .....

DELBERT H. KINGSTON & ASSOCIATES
Complete Sales Service . . . Auction and Private Treaty . . . Our listings include Proved Sires, outstanding bulls, cows, heifers. Also a few top show prospects. Fieldmen at your service. Gary, Illinois —Box 404—Phone: MErcury 9-5531.

HOLSTEINS

ART CAMENZIND'S

DAIRY CATTLE

200 to 300 head of quality springing Holstein and Guernsey heifers and young cows, year around. Picked for production, type and clean well formed udders. Herds bought and sold. Satisfied cutomers, lifetime experience. All cattle are well fed and cared for. Mostly calfhood vaccinated and all are tested. Springing heifers shipped on approval, or cattle may be seen anytime. Two miles northwest of

Irvington, Nebraska
ON HIGHWAY 133
PHONE OMAHA, GLENDALE 0091

TOP HERD SIRE PROSPECT

This month we offer a young bull born 6/25/59 who is the son of a 578-lb. "Good Plus" 4-year-old from a wonderful cow family. His sire is "Excellent" and Gold Medal and his dam and sire are also "Excellent" and Gold Medal. For information call Carl Medsker at Grayville, Ind. 2-3319 or 2-3087 or write to

MEDSKER FARMS SULLIVAN, IND.

CARNATION LANCER TOPMOST
Born: July 3, 1959

OFFERING THIS DOUBLE GRANDSON OF BUTTER BOY

The calf pictured above is a son of Carnation Royal Lancer, "Excellent" who is the Res. All-American Aged Bull for 1959. Lancer is a Butter Boy son from an "Excellent" 1133 lb. daughter of Carnation Homestead Revelation. The next dam is an "Excellent" daughter of Carnation Black Magic.

There are five full sisters to Lancer in the Carnation herd. The two oldest are both classified "Very Good" as two-year-olds, one at 89 points, the other at 86 points. The former has been a member of the Butter Boy Get in 1957, 1958 and 1959. Another full sister was fourth prize heifer calf at Waterloo in 1959 and undefeated elsewhere. The older sisters both made over 641 lbs. fat as two-year-olds.

The dam of Carnation Lancer Topmost, pictured above, is a "Very Good" daughter of Butter Boy. She made 541 lbs. as a two-year-old. As a three-year-old on 2x in 305 days she made 16,041 lbs. of milk, 603 lbs. of fat 3.8%. She has two lovely daughters in production. The oldest classified "Very Good" as a two-year-old and made 530 lbs. fat on 2x. The younger one is not yet classified.

This is an outstanding calf with a strong, constructive pedigree.

Write for pedigree and price.

Carnation Milk Farm

Address:
CARNATION MILK FARMS
Dept. #178
Carnation, Washington

Ear tag # S-122 Born Feb. 7, 1959

This month we offer the Wis Spotlight son pictured above. He is dammed by Glendand Hopeful Inka who at 6 yrs. of age in 305 days on 2X milking produced 17,053 lbs. milk and 603 lbs. butterfat.

This young sire is ready for service and has inheritance to sire type and profitable production. For price and pedigree write:

STOFFELL'S MILK FARM
Route 12 Knoxville, Tennessee

TRI-COUNTY DAIRY CATTLE ASSOCIATION

Let us help you select your foundation Holsteins and Guernseys, both purebred and grade from herds of high productivity in the finest dairy farm area in Wisconsin. Orders also filled at your direction.

FRANCIS DARCEY and SONS
Box 143 Watertown, Wisconsin
PHONE 264 OR 262IJ1

The Clyde Newcomb Herd of
REGISTERED HOLSTEINS
WILL BE SOLD AT
Watertown, Wis., TUES., MAY 17

Consisting of 36 head certified and accredited. Additional top consignments will be offered. Some of the choice animals in the herd are as follows—

Frisby Mistress Mary Walker	606 fat	16203 Milk
Frisby Vale Pet	506 fat	14800 Milk
Frisby Inka Rose Lad	511 fat	14662 Milk
Frisby Rosella Ramar	525 fat	13748 Milk
Frisby Linda Lou M	599 fat	14441 Milk
Frisby Belle June Romiad	526 fat	13197 Milk
Frisby Opal Romiad Oliver	531 fat	14616 Milk
Frisby Betty Jane Romiad	629 fat	17161 Milk 2 yrs.

Mr. Newcomb purchased most of his herd from the well known Frisby dispersal. The fact that his boys are leaving makes it imperative to sell.

Francis Darcey and Sons, Mgrs.
WATERTOWN, WIS.

REGISTERED AND GRADE DAIRY CATTLE
Holsteins, Guernseys, fresh and springing cows and heifers for spring or fall milk. Some out of D.H.I.A. herds. Calfhood vaccinated. Transportation available. **Ben W. Nehls, Juneau, Wisconsin, Office Fulton 6-2046, Residence, Beaver Dam — Turner 5-4584.**

TOP HOLSTEINS — TOP SERVICE
Select well grown cattle of superior breeding from this outstanding dairy area, where customers return year after year for more. **You, too,** should buy in Richland County. The Richland County Holstein-Friesian Assn., **Frank Brewer,** Fieldman. Phone Midway 7-2460, **Richland Center, Wis.**

BUY HOLSTEINS STRAIGHT FROM "THE HEART!"

Best selection from one of the world's largest dairy counties. Over 15,000 cattle are on D.H.I.A. test and more than 40,000 bred artificially from some of the top proven bulls. Also a few serviceable bulls from high record dams. Fieldman sales and service. For information write: **Frank E. Cairns, Fieldman, City County Bldg. Madison, 9, Wisconsin.**

TEL. ALPINE 6-0513 OR CEDAR 3-5539
DANE COUNTY HOLSTEIN BREEDERS CO-OP ASSOC. MADISON, WIS.

WISCONSIN STATE INSTITUTION
HOLSTEINS

"With development of bloodlines in our institution herds that have proved so outstanding in some of the best herds in the U.S.A., and in many foreign countries, we continue to offer the best in breeding stock.

"The Excellent and Gold Medal animals speak for themselves and with intensified linebreeding their offspring run true to form.

"A number of choice bulls from which to select a herd sire always available.

"For Information and sales lists, write to

FRED M. WHITEMARSH, Farm Supervisor
STATE DEPARTMENT OF PUBLIC WELFARE
State Office Building, Madison, Wisconsin."

Holstein Cows and Heifers

If you're looking for cows or heifers come to Dodge County where good Holsteins are raised. Buy them first-handed and save expenses. We have 250 head of bred and springing grade and purebred Holstein cows and heifers on hand at all times. Can furnish transportation for any number large or small.

LOUIS NEHLS
Phone FULTON 6-4401 Juneau, Wisconsin

REGISTERED AND GRADE HOLSTEINS
Select foundation Holstein cows and heifers with production, type, and size from our Foundation Wisconsin herds. Artificial Breeding, Calfhood vaccinated, Bang's and T.B. tested. Fieldman service or will fill orders at your direction.

PIPER BROS.
Box 362 Phone 2170 Watertown, Wis.

WISCONSIN DAIRY CATTLE & HEIFERS

H. A. MEYER CATTLE CO.
PLYMOUTH, WISCONSIN
Phone TW 2-6941

Fieldman Service or will fill your orders.
CONSIGNMENT SALE EVERY TUESDAY.

BUILD UP YOUR HERD WITH
Wisconsin Dairy Cattle
Holstein - Guernsey - Brown Swiss

COWS, HEIFERS, ALL AGES
Registered and Non-registered

We have 200 to 300 head on hand at all times. Come here and make your own selection. Or we will fill your order on direction from you and deliver C.O.D. on your approval. All animals T.B. and Bang's free, accompanied by health certificates. Delivered in truckload lots to your farm, in our own trucks, by experienced cattlemen.

JAY SHEAFOR, JR.
Rt. 1, Richland Center, Wis.
Midway 7-3209 or Midway 7-2516

FOX RIVER VALLEY HOLSTEIN BREEDERS ASSOCIATION
Serving nine counties, in the heart of Wisconsin's dairy land. Foundation registered and top quality grades available, bred for type and production. Over 300 registered breeders in area. All popular Holstein bloodlines. 5 large artificial breeding rings serving the area. Come and make your own selections, or will buy on order at your direction. Fieldman service. Write, wire or phone G. J. STANCHFIELD, Phone WA 25264, 30 Champion Avenue, Fond du Lac, Wisconsin.

HOLSTEIN DAIRY CATTLE — Registered and Grade cows, heifers of all ages. TB and Bang's tested, calfhood vaccinated. Write or call for free price list. Fieldman service or will fill orders at your direction. **GEORGE PIPER, Watertown, Wis., Phone 2913-W.**

NORTHERN DAIRY CATTLE DIRECT FROM FARMER BREEDERS

T.B. & Bang's accredited county. Fieldmen sales & service, or orders filled. For information write, call, or wire **Barron Co. Coop. Dairy Cattle Sales Ass'n, Barron, Wis. Glen L. Krahenbuhl, Mgr. Ph: Lennox 7-3202.**

COLUMBIA COUNTY HOLSTEIN BREEDERS' ASS'N

Serving five counties. Offering select quality heifers and young cows, grade and registered, bred for type and production. Also choice, serviceable, registered bulls. Mostly Burke and Carnation breeding. Free fieldman service.
For information write: W. K. WRIGHT, Rt. 1, Columbus, Wis. Ph. Fall River 26F21

JEFFERSON COUNTY HOLSTEIN BREEDERS' ASSOCIATION
REGISTERED and GRADE HOLSTEINS
available from top DHIA accredited herds, many using artificial breeding. Heifers at all ages, good young cows.
Free fieldman services. Write-wire-phone for prices!
WILL BETSCHLER, Fieldman
Office in Black Hawk Hotel, Fort Atkinson, Wis. Phone JOrdan 3-2329
Res. Phone LYnwood 3-2351 at Sullivan, Wis.

INTER-COUNTY DAIRY CATTLE ASSOCIATION
BOX 177
WAUKESHA, WIS.

Telephone Liberty 7-3644 or Liberty 2-3726
118 BAXTER STREET WAUKESHA, WISCONSIN
Services of—W. L. Baird—Arthur F. Bennett—James L. Gordon—Reynold Bennett at your disposition.

PUREBRED HOLSTEINS ON TIME

Milking Herd of 50 Purebred, Registered Holsteins Mostly Ormsby and Carnation Breeding With Records Averaging 458 lbs. Fat—3.8% test. Herd Certified on Blood—T.B. Accredited. Will Be Sold to Responsible Party 25% Down, Balance in Monthly Payments over 3 Years Time. Present Herd Sire a Son of "Butter Boy" out of a dam with better than 900 lbs. Fat and classified "Very Good".

BUILDING BETTER HERDS

AGAIN ATHLONE ADMIRAL FOBES
Very Good — Gold Medal

13 dtrs. ave: 13552 — 4.06% — 555 ME Increase over dams: + 33 lbs. Fat. 14 classified dtrs. ave: 82.1 as 2-yr. olds. 5 dtrs. now milking over 80 lbs. per day as 3-yr. olds on 2x, all over 4.0% test.

TWO cash crops with REGISTERED HOLSTEINS

Big REGISTERED HOLSTEINS produce a big milk crop . . . and do it more efficiently due to extra roughage capacity. That's cash crop No. 1.

Each REGISTERED HOLSTEIN calf you raise has a higher cash value than an ordinary calf. Calves sell for more and, if kept, build herd value at a faster rate. That's cash crop No. 2.

It will pay you to invest in REGISTERED HOLSTEINS . . . and *keep* them registered.

THE HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA
BRATTLEBORO, VERMONT

Registered HOLSTEINS *Breed of the Times*

"fit the farm... fit the market"

Improved STUD SERVICE CURTISS FOUNDER
OTTO SCHNERING FOUNDER

SELECTED MATINGS NOW ONLY $10.00

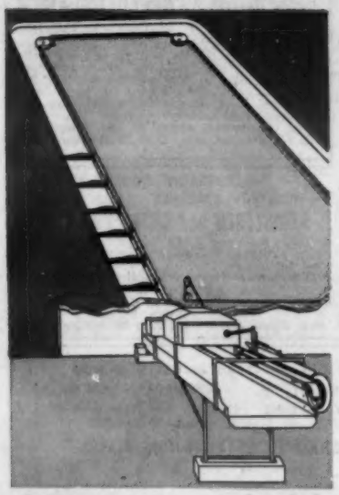
In most areas. Any Curtiss sire available at this new low price. For more detailed information in regard to this new Selected Mating program which utilizes both liquid and frozen semen, contact your nearest Curtiss Distributor's technician or write direct to us.

Five dairy breeds, three beef and one dual purpose

CURTISS IMPROVED STUD SERVICE, Inc.
A Subsidiary of Curtiss Candy Company
Cary, Illinois Otto Schnering, Founder Phone: MErcury 9-2041

Dairymen: **GOING MODERN?**
Invest in the best
Go Jamesway!

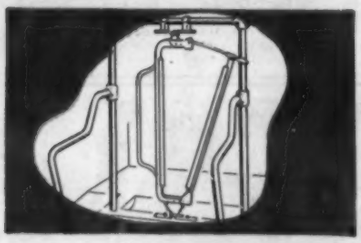
BUY NOW PAY LATER
Ask for details



SAME-SPEED SHUTTLE-STROKE BARN CLEANER

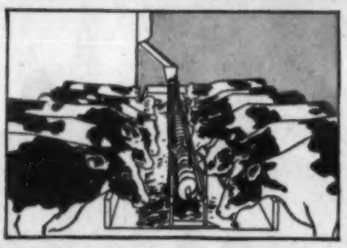
- Cleans 160 ft. of gutter
- Low-cost installation
- Steel elevator included

Puts small-herd operators on a big-scale, high-economy, Power Choring basis. Easy to install. Jamesway quality throughout. Exclusive Shuttle-Stroke cleaning with high-speed paddles traveling 100 ft. per minute. Can't overload. Can be hand tripped for extra-heavy or extra-light loads.



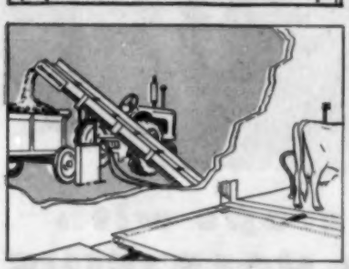
STALLS AND STANCHIONS

Hot-dip galvanized both inside and out. Finish is thirty times heavier than paint—won't chip, crack, flake. Jamesway offers a choice of stanchion, panel-type, lever, comfort, tandem lane and herringbone stalls.



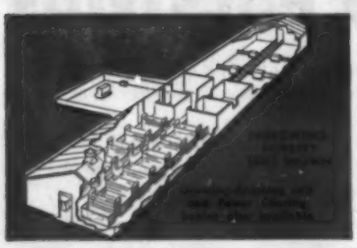
AUGER FEEDER HAS NO BEARINGS

No hangers to slow or jam feed. Speeds feed smoothly out a continuous-flight auger. Very simple. Very dependable. Efficient machine—needs only a small H.P. motor at the near end of bunk.



CLEAN GUTTERS WITH TRACTOR POWER

Save $300 or more with this new Shuttle-Stroke Cleaner and elevator. Powered by Jamesway hydraulic pump from your tractor's PTO shaft. No motor, wiring costs. High speed 95′ a minute elevator gets liquids up into spreader.



ENGINEERED HOUSING FROM BIRTH TO FINISHED HOG

Coordinates housing, mechanical feeding, watering, ventilation and cleanup into carefully engineered, factory-built farrowing and finishing units • Power Choring does the work • Hog-raising costs go down • Easy to assemble.

Mail a postcard today for more information on Jamesway Power Choring dairy equipment. Write: James Mfg. Co., Dept. HD-50B Fort Atkinson, Wisconsin. Or see your Jamesway dealer.

Jamesway franchises now available in some areas. Write for information.

JAMESWAY

FIRST IN POWER CHORING.
Jamesway®
A DIVISION OF ROCKWOOD & CO.
Fort Atkinson, Wis. • Lake Mills, Wis. • Lancaster, Pa. • Los Angeles 63, Calif.
FOR POULTRY • FOR DAIRY • FOR LIVESTOCK

JAMESWAY

SALT . . . is it vital and poisonous, too?

Though health is dependent on adequate salt, excessive salt causes poisoning if water is not available to body tissues.

by E. A. Woelffer, D.V.M.

SALT is very necessary in the life and well-being of livestock. Babcock and Henry conducted early research on salt at the Wisconsin Experiment Station. They divided a herd into two groups of equal number. One group received salt in amounts usually given to farm animals. The other group received no salt except the inadequate amount contained in the grain, hay, and silage.

In less than a month some animals in the second group showed abnormal appetites for salt. As time went on, these animals lost weight, appeared listless, and dropped in milk production. Their coats became rough and they dropped weak calves. As the salt-deficient diet was extended, a general breakdown followed.

Animals usually require more salt than is supplied in the concentrate feed. If salt is supplied in the ground feed only, animals not receiving grain will develop a salt hunger in a short time.

How much?

Salt requirements vary in different localities. Factors to consider are the salt content of the feed, whether additional salt is available, and whether the water contains an appreciable amount. In some arid areas where alkali deposits are common little, if any, extra salt is needed.

If allowed to consume as much salt as they wish, cows will take from 1 to 4 ounces daily. It has been estimated a sufficient allowance is 0.75 of an ounce daily per 1,000 pounds of live weight plus 0.3 of an ounce for every 10 pounds of milk produced.

Provide continually . . .

The most common and perhaps the best practice is to mix 1 pound of salt with each 100 pounds of grain. In addition, salt may be provided in loose form or in blocks on a "free-access" basis so the animals can eat it when they wish.

Mixing salt with concentrate feed tends to make the mixture more palatable and insures cows getting salt each day. Since heifers and dry cows on pasture do not always get grain, it is important they always have convenient access to salt.

Too much salt?

How about too much salt? Is it poisonous in excessive amounts? Swine can become sick by drinking brine or eating garbage that has been pickled in brine. For swine, a fatal dose of salt has been estimated to be from ½ to 1 pound.

Several years ago we learned of 30 hogs in which sudden death occurred following what was believed to be salt poisoning.

When the herdsman realized he had failed to provide salt for the pigs for a number of days he placed salt blocks in the yard. That evening the salt blocks were removed because the pigs fought over them. Excessive salt consumption was considered the cause as teeth marks were noticed and chunks of salt had been chipped from the blocks.

The fatal dose for cattle has been estimated to be from 3.3 to 6.5 pounds. Animals that do not receive salt for a period of time are likely to eat an excessive amount but it will not be necessarily harmful.

Inflammation of the inner wall of the stomach may follow consumption of excessive amounts of salt. Following absorption into the circulation, sodium exerts a depressing action on the central nervous system. There may be a complete loss of appetite, marked redness of the membranes of the mouth, colic, diarrhea, polyuria, and blindness.

There may be a general paralysis or only of the hind quarters. In the cow, the lining of the abomasum (fourth stomach) may become swollen, congested, and hemorrhagic (bloodshot).

What causes symptoms of sickness and death of animals when excessive salt is taken into the digestive system?

William Midway and Morley Kare of the department of physiology, New York State Veterinary College, set about to find the answer. Their aim was to determine the mechanism of toxicity associated with excessive intake of salt.

New facts come to life . . .

An extensive and comprehensive study was carried on with animals and birds. Among other things, it was found that involuntary ingestion of excess salt, as from drenching with a brine solution, resulted in a rapid absorption of the salt from the intestines. Once the salt was absorbed, the scientists noted a rather complicated interaction of physical and chemical change in the tissues of the body. A significant development was a pronounced increase of sodium content in the brain.

The work revealed some rather definite conclusions. Their findings, however, leave open to question the commonly held opinion that salt is inherently toxic to animals. They found symptoms from excessive salt intake could only be produced during periods of concurrent water deprivation, and the cause of death was dehydration of vital tissues.

The greater sensitivity of young animals to salt as opposed to mature ones was explained on the basis of their relatively more limited water reserves. What does all this mean? Simply this:

Animals will not ordinarily eat too much salt. If not enough or none is available, they will develop a hunger for it. They will then consume excessive amounts if it is provided.

Will they get sick or die if they eat too much? Under ordinary circumstances they will not become sick since salt is not inherently poisonous. Here's the important thing: They may get sick and die if they eat too much salt but only **if not enough pure, fresh water is immediately and constantly available.**

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Meningitis

There are a number of diseases of calves and adult cattle that affect certain brain tissues. If the inflammation is confined to the lining called the meninges, it is termed meningitis. Usually it is a secondary condition, but meningitis occasionally occurs as a primary disease in calves.

In most cases of meningitis the underlying cause is an infection. Some inflammations, however, result from hemorrhage or congestion. A virulent infection responsible for meningitis of calves is the organism *Spherophorus necrophorus*. This organism is often associated with foot rot and diphtheria.

Meningitis often follows such diseases as navel ill, certain pneumonias, diphtheria, as well as castration or other minor operations.

Symptoms . . .

Animals with meningitis sometimes show fever in the early stages. Usually the temperature is normal, particularly in advanced cases. Symptoms vary considerably.

Often there is restlessness, shaking of the head, and pressing forward in the stanchion or stall. Frequently the animal stamps its feet and shows excitement, which is followed by a period of depression. The head and neck are sometimes retracted, and there may be circling as in listerellosis or other brain diseases. As the disease progresses, general paralysis and convulsions usually follow.

Diagnosis . . .

Until the clinical picture is well-established, early diagnosis may be difficult. Consideration must also be given to diseases which cause secondary meningitis. In calves these could include lead poisoning and toxic digestive conditions. In cows it could develop from or be associated with metritis, listerellosis, or ketosis (acetonemia). Laboratory examinations of fluids permit differentiation of meningitis from encephalitis.

Treatment . . .

Hynotics are indicated and the affected animal should be kept quiet. Purulent meningitis may be successfully treated with sulfonamides and some of the newer antibiotics.

STIMULATING UDDER DEVELOPMENT

I have a 3-year-old Holstein heifer due in 30 days. She shows no udder except four teats. Is she likely to develop naturally or can development be stimulated?
Sandusky, Mich. B.G.

Several hormones and combinations of hormones have been used experimentally to stimulate udder development in cattle. The combination most frequently used is diethylstilbestrol and progesterone. Oxytocin tends to contract the smooth (involuntary) muscles of the body, including those connected with the milk-secreting system, causing a letdown of milk. Oxytocin has little effect on udder tissue growth and development.

It has not yet been proved practical to stimulate udder development through artificial means. In your Holstein heifer it might be advisable to let her freshen. The udder may still develop and produce milk. If not, treatment with a series of hormone injections may still be tried.

LACK OF DESIRE

I have a 2-year-old Holstein bull that is slow at breeding. He seems to have plenty of pep otherwise.
Villard, Minn. H.R.

Several reasons account for lack of interest by bulls. All of these conditions should be checked in an effort to find the cause. Contributing factors are diseased or injured feet and legs; injury or inflammation of bones of the spinal column and joints, including rheumatic pains; hardware disease; and a number of other minor conditions.

In otherwise normal bulls, we have found therapy with iodinated casein helpful in stimulating libido.

If this bull is of outstanding breeding stock, an attempt should also be made to determine his level of fertility. If it is satisfactory and his physical action cannot be improved, it may be advisable to have some of his semen frozen and used artificially.

CHRONIC EDEMA

I am writing you about an udder condition which my cows have had for about a year.

The udders seem to have a spongy or puffy swelling, not caked or hard and the milk is not stringy or flaky. So far I don't agree with any of the theories which I have heard and was wondering if you could give me some information.
Silver Lake, Minn. R.S.

I think I know the type of swelling or edema you refer to. Although you did not mention it, the swelling is usually confined to the rear quarters and often extends up on the rear of the udder, sometimes even higher than the udder. This condition usually is referred to as chronic edema.

I have talked with a number of veterinarians and physiologists to try to determine the cause of the condition. No one knows the cause, and fully as frustrating is the fact that no one knows what to do for it.

Cortisone injections appear to show temporary improvement in some udders. Others show temporary improvement from reducing the grain ration. As soon as some good information on this condition becomes available, it will be published in the veterinary column.

VACCINE FOR COWPOX

In a recent issue of your magazine there was a reference to a vaccine for cowpox. Where can the vaccine be obtained?
Lavergne, Tenn. L.B.N.

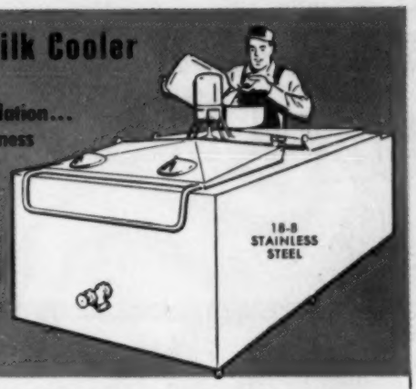
Your veterinarian should be able to obtain smallpox vaccine either from a wholesale drug company or possibly through a local physician. Please bear in mind that the use of smallpox vaccine may be effective only in the true or vaccinia type of cowpox. This type is very rare. It has been shown that smallpox vaccine is not effective against the common or chronic cowpox which is so frequently seen in the teats and udders of dairy cows.

Push-button Power-Choring
for dairymen from
Jamesway®

BUY NOW PAY LATER Ask for details

New Ice Bank Milk Cooler

- 1-piece FoamCast insulation... has twice the effectiveness of cork or fiberglas
- 18-8 stainless steel inside and out
- Runs all the water over all the ice all the time

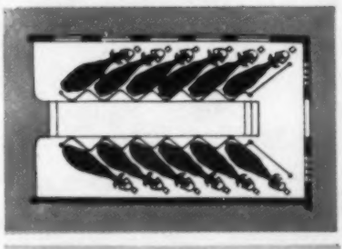


Lowest pouring height. Wide-radius inside corners. No-drip nylon motor gears. Full-width handles. Lock-open covers. Goes through milkhouse door. Available in 175-500 gal. sizes. Meets all 3-A standards. Top-quality Jamesway construction.

New Jamesway Milker

MILKS, WASHES, GUARDS HERD HEALTH

Controlled Differential Vacuum milking protects udders. Each electric "Magic Master" pulsator operates 6 milkers. Vacu-Valve washing saves hot water, detergents. High turbulence air-water cleans lines. No pumps needed for lifting or circulating.



COW-A-MINUTE MILKING

Cow-a-minute milking with half the help — yours with Jamesway Herringbone Milking Parlor. Rugged wall mounting. No floor brackets. Sturdier uprights for longer life. Deep mangers cut feed loss. Removable feed pans. Stalls Hot Dip galvanized.

Big Jim Silo System!

"BIG JIM" SYSTEM FILLS—FEEDS OUT

Big Jim System fills and unloads 20', 24', 30' diameter silos. Levels during filling. Increases storage capacity of silo. Feeds silage down "donut" hole center, out the bottom. Boosts production, cuts cost. Improves quality of silage.

CUTS LEVEL, UNLOADS FAST

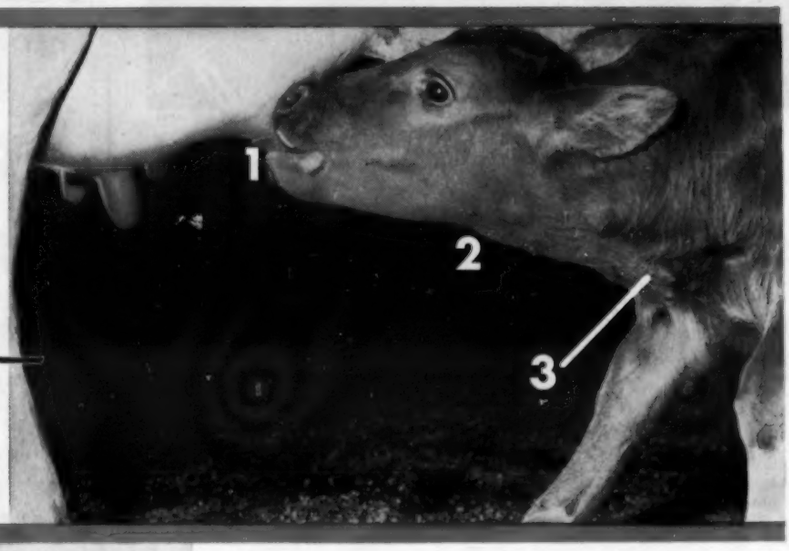
Raises into silo dome for 100% fill-up. Jamesway's Volumatic Silo Unloader cuts level, unloads fast in frozen or fluffy silage, corn or grass. Fast throw-down. Positive Power Circle Drive. Doesn't need silage traction. Non-tip 3-point suspension.

Mail a postcard today for more information on Jamesway Power Choring dairy equipment. Write: James Mfg. Co., Dept. HD-50-A, Fort Atkinson, Wisconsin. Or see your Jamesway dealer.

Jamesway franchises now available in some areas. Write for information.

FIRST IN POWER CHORING®
Jamesway®
A DIVISION OF ROCKWOOD & CO.
Fort Atkinson, Wis. • Lake Mills, Wis. • Lancaster, Pa. • Los Angeles 63, Calif.
FOR POULTRY • FOR DAIRY • FOR LIVESTOCK

Since the first calf milked the first cow—



...good cow milking has required three steps

1 **A physical tug . . . a vacuum pull**

2 **A break in the column of milk**

3 **Free Flow of milk**

Surge gives you natural cow milking. Surge has genuine downward and forward built-in TUG & PULL.

As the calf swallows, the column of milk is broken. Surge has the Breaker Cup to provide a *positive break* in the column of milk after it leaves the teat cups.

Milk cannot backwash up onto teats as it can with claw-type units . . . but moves out of the breaker cup in a one-way FREE FLOW.

© Babson Bros. Co., 1960

FREE BOOK: *If you are interested in a better place to do a better job of cow milking, send for a free copy of our new book, "Surge Picture Window Parlor."*

Write Dept. 66 —
Babson Bros. Dairy Research Service
2843 West 19th St., Chicago 23, Ill.

SURGE

BABSON BROS. CO.

2843 West 19th Street, Chicago 23, Ill.

ATLANTA • DALLAS • KANSAS CITY • MINNEAPOLIS • SACRAMENTO • SEATTLE • SYRACUSE • TORONTO